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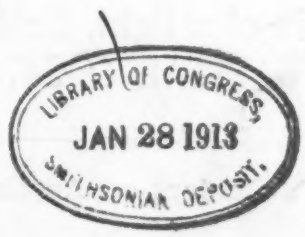

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The Astoria Plant of the New York Consolidated Gas Company.

[Prepared for the JOURNAL, by MR. C. C. SIMPSON, JR.]

CHAPTER III.

The year 1906 was a busy and very trying one for the engineering staff at Astoria, for the operations had now reached an advanced enough stage to set a date for the completion of the first unit and for turning it over to the manufacturing department. One who has ever been engaged in any large construction work can appreciate what an enormous amount of labor this entails on those in charge; but orders had been given to have everything in shape to make gas the following year, and "Orders are orders." Rome was not built in a day, nor yet in 4 years, but a few thousand modern Romans ($1.50 a day variety), directed by a score of gas engineers, could easily have broken the long-standing building record on the Italian peninsula, if any faith can be placed in past performances.

Fig. 41 is a general view of the work in the first coal gas unit as it had progressed up to the spring of 1906. This photograph was taken from a point about C-17, looking northwest, and shows all the buildings completed, as far as the exterior is concerned, while on the left can be seen the east holder tank excavation ready for concrete. Then, walking a half mile or more to the north shore of the property, we can see that work has been progressing rapidly on the water front also. Fig. 42 is a general view of the north shore dock work, as it appeared in July, 1906, practically all of the dry land here seen having been made by soil dumped from the building excavations and by sand pumped ashore by suction dredges. These dredges, which have been working off shore for several years, have now converted a series of sand and mud flats into navigable water, and a channel has been marked to allow deep draught coal vessels to reach the unloading piers, for coal must, of course, be delivered before gas can be made. The marking out of this particular channel recalls a somewhat amusing incident, in which the writer played a leading—or, to be more accurate and truthful, a misleading—part. The locations for the channel buoys had been established from a chart of soundings in the office; but as the range marks had not been extended far enough to the north it was necessary to give the north and south coordinates of the buoys by means of a transit set up on Berrian's Island. To shorten a lengthy story, however, the party on the scow, mistaking the writer's battle with several million Berrian Island mosquitoes for the prearranged signal, dropped the first buoy in several inches of water, and rowed on, regardless of "S. O. S." signals in every language under the stars, and, to further complicate matters, a few moments later the plant's new launch, manned by a still newer engineer, turned proudly into the newly-marked channel, and paused abruptly on a mud bank for reflection—and repairs. No; no one received a blue envelope, as the mosquitoes proved willing witnesses for the defence.

But, to return again to dry land. Fig. 43 is a photograph, looking east along the north shore bulkhead, which shows the starting of work on the foundations for the coal unloading towers. Practically the whole area inside of the bulkhead lines, as seen in Figs. 42 and 43, is to be used for the storage of gas coal—an area approximately 575,000 square feet. Quite a lot of ground space! Yes; but "you have to put the carbonaceous stuff somewhere."

At the north end of the two retort houses one sees, in Figs. 44 and 45, that work is well underway on the apparatus for delivering coal from the cars to the storage bins. The coal is loaded into cars at the north end of the storage area, and dumped from them into the retort house track hoppers. It is then brought to the crushers by means of scraper conveyors, screening being accomplished in transit. It then passes through the disintegrators, and is raised by a bucket conveyor to the belt conveyors in the houses, which finally place it in the storage bins. But coal produces coke as well as gas, and provision must also be made for the removal and storage of the former product. At the north and south end of each retort house is a large coke storage bin, Fig. 46, showing the one at the south end of the inclined house. The coke is delivered into the bins by conveyors, which run through the houses beneath the discharging ends of the retorts, the four bins having a total storage capacity of 26,400 bushels. Cars are loaded from hoppers beneath the bins, the coke being transferred from these to barges and sent to the various distribution depots. Astoria coke is never touched by the hand of man, from the time it arrives at the dock as coal, until it is finally shoveled into the consumer's fire. Fig. 47 shows the trestles which will carry 36-inch steel mains from the retort houses to the exhausters, and on the ground some of the pipe is seen ready to be placed.

Fig. 41.

Fig. 42.

Fig. 43.

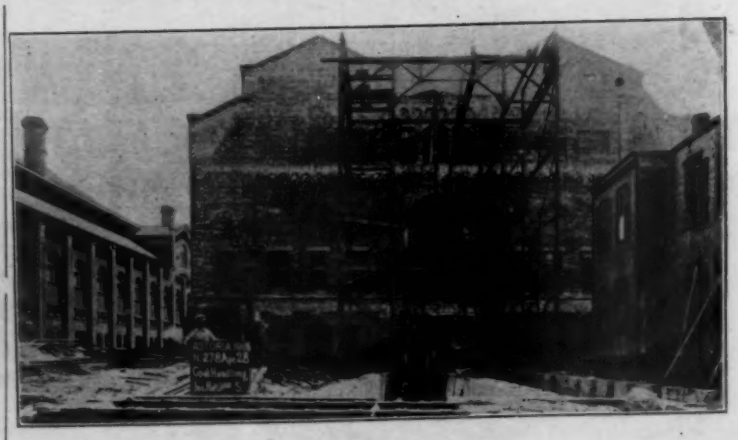


Fig. 44.

On the concrete roofs of the tar and ammonia tanks pump houses have been built to contain the necessary pumping machinery, the house erected over the ammonia tanks being shown in Fig. 48. The design of this house was later modified to provide space for a complete chemical laboratory, for the exclusive use of the plant; and, except for this feature, the tar tank pump house is its duplicate.

The installation of apparatus in the tar extractor houses has been progressing rapidly, Fig. 49 showing two of the set of three cyanogen washers under construction in the west house. Each of these washers will be 12 feet in diameter, and 16 feet 5½ inches long, and will consists of 4 absorption and 1 double agitation section with copperas solution as the absorbing liquid. Direct connected vertical steam

Fig. 45.

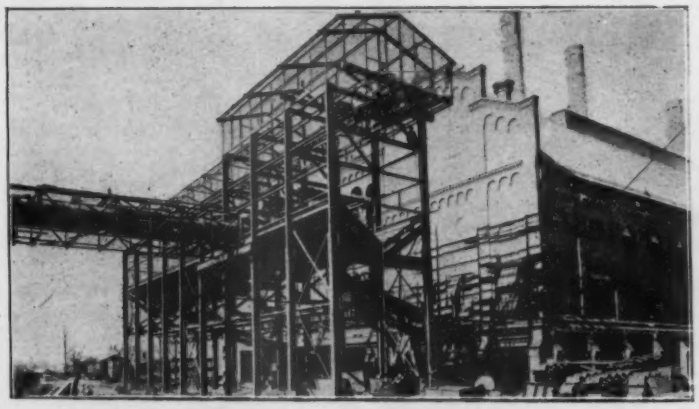


Fig. 46.

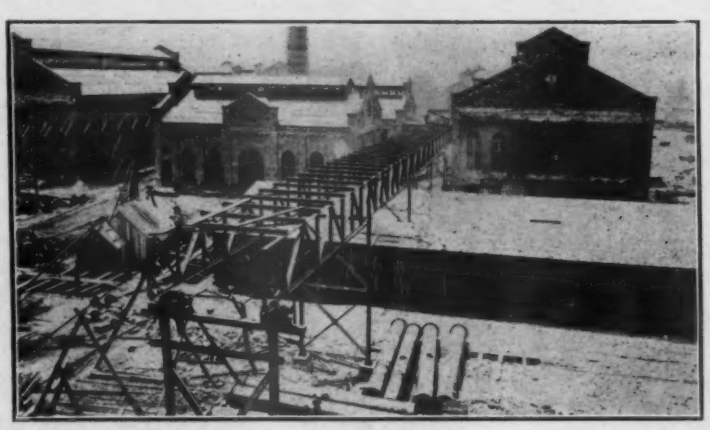


Fig. 47.

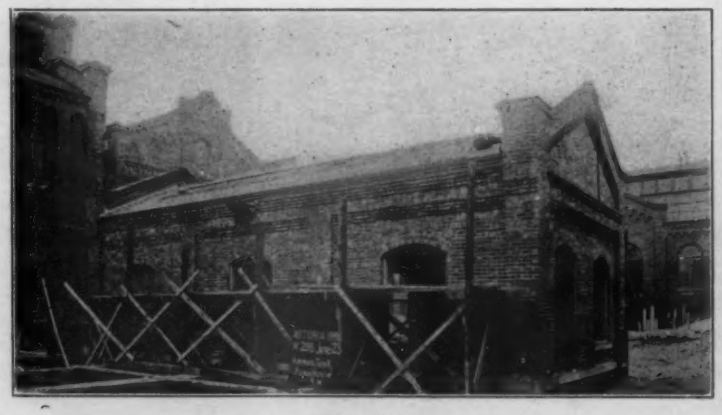


Fig. 48.

engines revolve the main shafts once per minute, and the liquor circulation is maintained by the rotary watch pumps. To retain a clear impression of the size of these washers it is only necessary to compare the main shaft of the right hand machine with the head of the photographer's assistant, who is at about the same distance from the camera. The three machines have ample capacity to handle 10,000,000 cubic feet of gas in 24 hours.

Two of the 3 condensers in the east condenser house are shown in

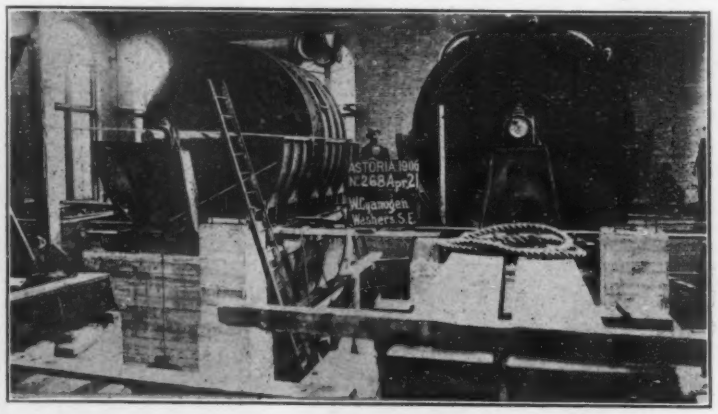


Fig. 49.

Fig. 50, though unfortunately there is almost as much piping and

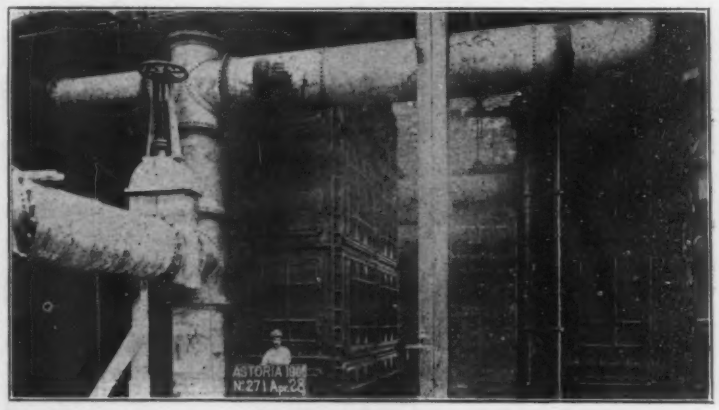


Fig. 50.

staging to be seen as there is apparatus in which we are interested. However, to paraphrase the words of the fox in a noted fable, the outside of a condenser is hardly worth looking at anyway. They are of the horizontal, return water tubular type, and have a combined daily capacity in excess of 10,000,000 cubic feet. The general dimensions of these condensers are 12 feet by 17 feet by 34 feet in height. Each condenser house also contains a set of 3 rotary ammonia scrubbers, 10 feet in diameter and 22 feet long, driven by direct-connected steam engines, the scrubbing capacity per set being approximately 13,000,000 cubic feet daily.

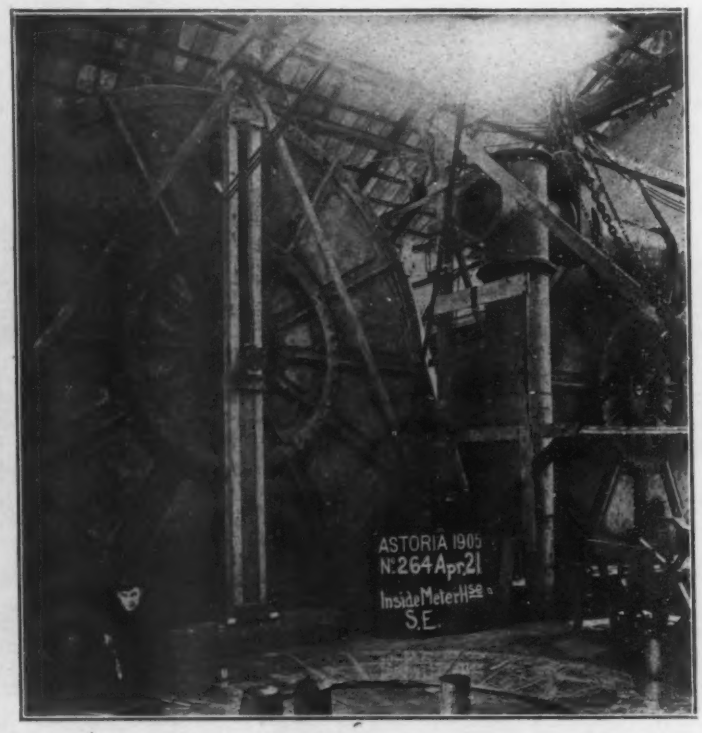


Fig. 51.

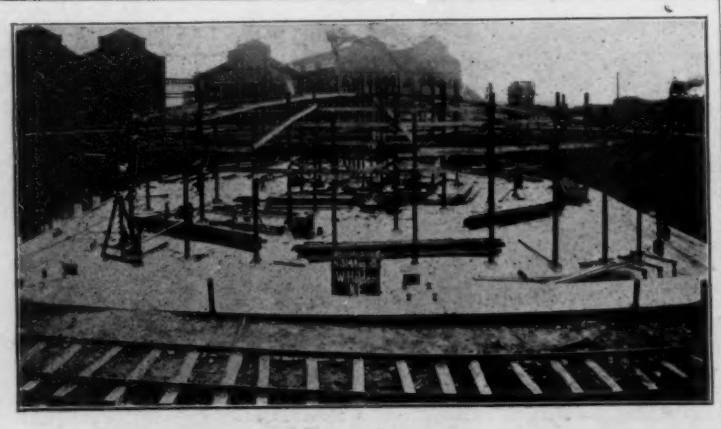


Fig. 52.

Fig. 53.

Fig. 54.

Entering the meter house we observe the erection of 4 enormous station meters, Fig. 51 showing two of them, and 2 are about all that could be crowded into the plate. These meters are equipped with Hinman drums, 16 feet in diameter, and each one can pass 7,000,000 cubic feet of gas in 24 hours, giving the house a daily capacity of 28,000,000 feet.

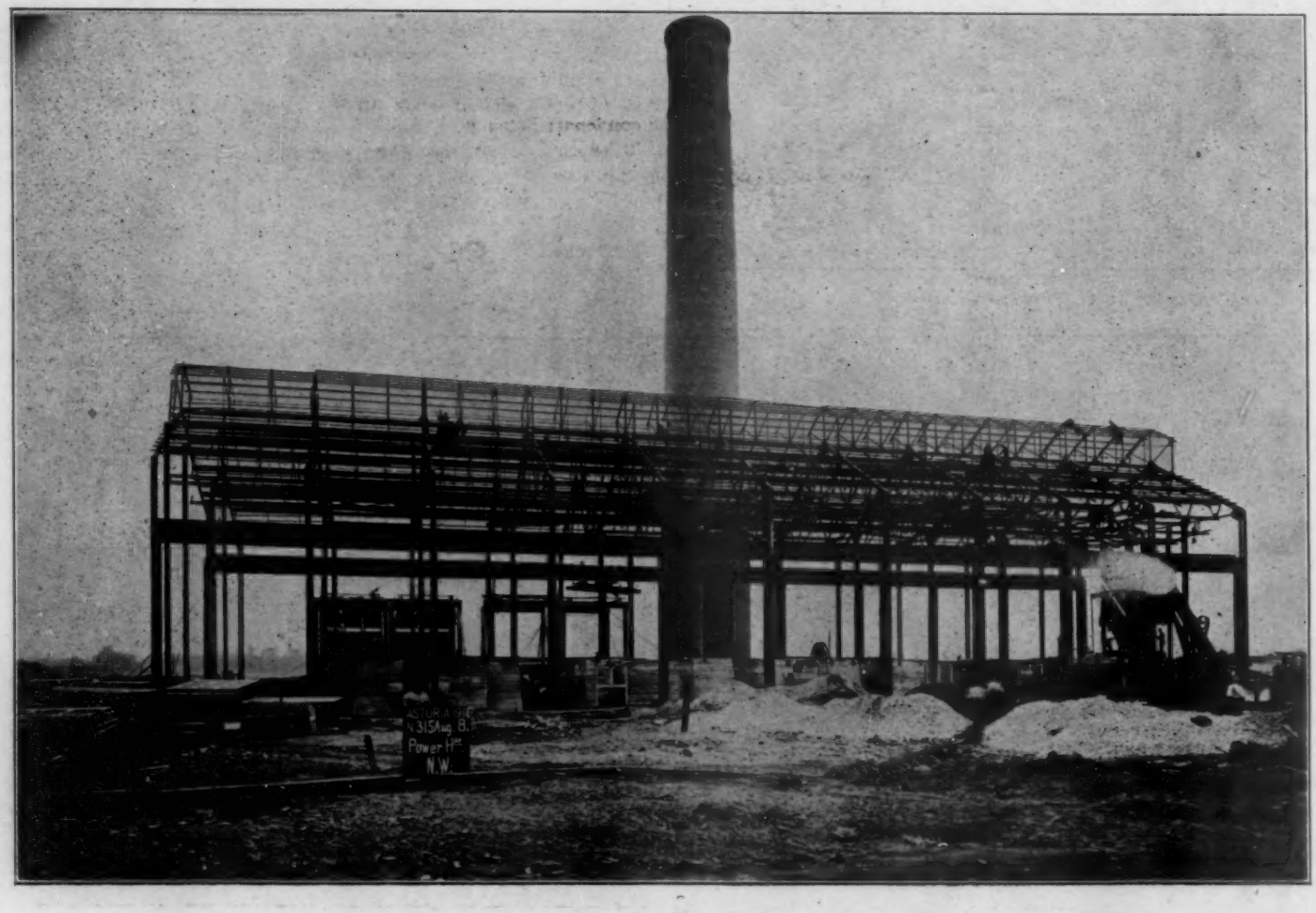


Fig. 56.

In Fig. 52 we see the permanent support for the west holder crown, practically completed, and in the background the inside of the concrete tank has gone into mourning through the agency of several coats of waterproofing. Two months later Fig. 53 shows the crown sheets being placed, while down in the tank the 5 telescopic sections have been rivetted up. Just to the right of the signboard can be seen the two 48-inch inlet pipes, 2 outlets of equal diameter being provided, though not visible in the photograph.

While we have been looking over the holder construction, the steel frame for carrying a 250,000 gallon water tower has been erected just north of the boiler house, Fig. 54 showing it as the first course of tank sheets was being placed. This steel frame reaches a height of 75 feet above the ground, and the tank itself is to be 30 feet in diameter and 50 feet high. Six wells, which will furnish the plant with over 300,000 gallons of fresh water daily, have been driven in the property, and there has also been provided a 6-inch emergency connection to the city water system, which will give an equal amount if needed.

And now we come to the cuckoo's egg in our robin's nest; an electrical power house. This is not as bad as it may seem, however, for gas is not made by electricity in any way, shape or form, the "juice" being merely used to run the various motors installed about the plant and to furnish light in the buildings where a naked flame would be dangerous.

Fig. 55 shows the foundations completed and steel erection started

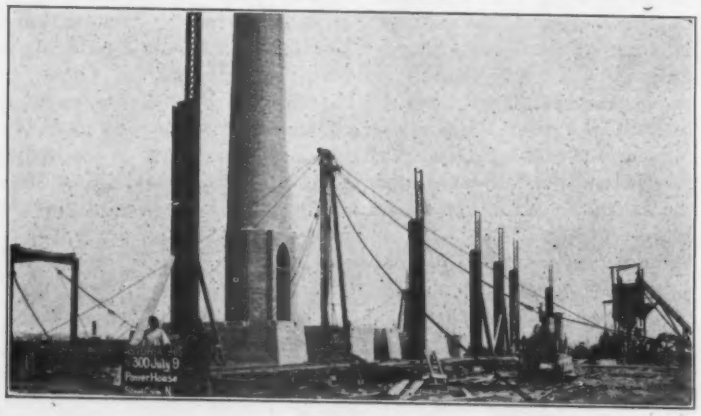


Fig. 55.

on this power house; and Fig. 56 (taken one month later) shows the steel skeleton completed, ready for the walls and roof.

At the left hand (or south side) of the building can be seen two of the four 600-horse power boilers, and in the center the completed stack, 12 feet in diameter at the top and 150 feet high. This power house is designed to furnish 2,300 kw. alternating and 1,000 kw. direct current daily, though, as this amount will not be required until several more units are completed, generators have only been installed for two-thirds of its capacity.

Is the unit ready for gas making? No; "not yet, but soon"—very soon. Just a few finishing touches, a few connections and adjustments, and the warming-up of the settings can be started.

Temporary Stoppage.

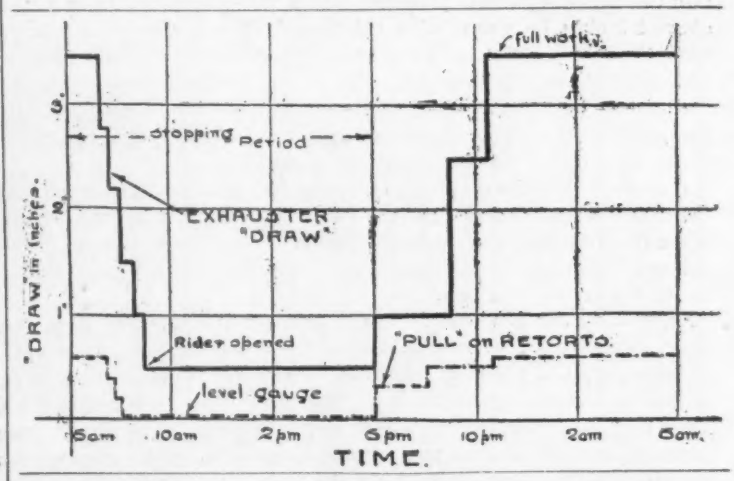
In an article "Communicated" to the *Journal of Gas Lighting* on this always new, ever old subject or happening, the author remarks that the question of temporary stoppage must necessarily be one of interest to all gas engineers; for, nowadays, there are probably few works which are unable to continue their supply without Sunday gas making, or which have insufficient storage capacity to carry them over the week-ends.

Although the operations of discontinuing the make of gas and recommencing it are usually carried on with little or no difficulty, and are seldom attended with any undesirable results, they are, as a matter of fact, not so simple as might at first sight be supposed, and it is necessary to take a good deal of care in order to insure smooth and consistent working. Conditions have been somewhat altered of late, owing to the fact that the modern idea of carbonization is to work heavy charges of 8 and 12 hours' duration; whereas until recently there was an almost universal preference for the lighter 6-hour charge. From the point of view of Sunday stopping, the larger and heavier charge is certainly to be preferred.

A great objection to any stoppage is that the continuity of the working is broken, with the result that the quality of the gas is affected, and it is difficult to keep the illuminating and calorific power perfectly uniform. London companies have also to bear in mind the London County Council, who, since they proved their right to Sunday testing some 8 years ago, keep a fairly vigilant eye upon the quality of the gas and prevent the possibility of an indifferent product being supplied to the consumers. The Sunday returns from testing stations, however, speak well for the shutting down methods employed, the average candle power tests for this day being seldom, if ever, below the returns received for week days. Thus consumers have no cause to worry themselves by supposing that on the first day of the week they are paying the same price for an inferior article.

An Effective Method.—The general practice is to stop on Sunday for a period of 12 hours—that is from 6 A.M. until 6 P.M., or in some cases the start is deferred to 10 P.M. In this way, Sunday labor in the retort house is practically done away with; and those companies who make a practice of allowing double pay for this day are enabled to effect a fairly considerable saving. There are many ideas as to the most effectual method of stopping and restarting; and the means employed must to a certain extent depend upon the conditions prevailing at the works—such as the amount of storage room available, and whether or not there is a water gas plant.

Below is described a method which will be found satisfactory from most points of view, and which has the additional advantage of being extremely simple. Though it is applicable to all cases, whatever the period of stopping, it will be assumed, for the sake of illustration, that it is required to shut down at 6 A.M. on a Sunday morning and to recommence at 6 P.M. the same day. The last retort is charged just before 6 A.M., and for some little time the full volume of gas is being driven off. The diagram is of a vacuum chart showing the pull at the exhauster for the 24 hours commencing at 6 A.M. On the same diagram is shown the pull on the hydraulic main for the corresponding period. The whole method of working can be easily grasped by referring to this diagram.



Regulation of the Draw.—From 6 A.M to 7:30 A.M., the amount of gas coming away permits the use of the full draw. After this period, the gas evolved gradually becomes less and less, and the draw at the exhauster is reduced by degrees until at 9 A.M. it is regulated to about ½ an inch. This means that the exhauster must work at its slowest possible speed, and the "rider" is opened slightly so as to give the engine sufficient load and to preserve a steady pull. It will be seen from the retort house curve that at 8 A.M. the draw is reduced so as to give level gauge at the hydraulic main; and this continues until 6 P.M. in the evening, when the retorts are again charged. In the same way the ½ inch draw is maintained at the exhausters until shortly after 6 P.M,, when it is gradually raised to the usual amount. The pull on the retorts is, of course, regulated by working the exhauster in conjunction with the retort house governor. Thus, it can be seen that there is no actual cessation of gas making and there is no need to blow away any gas. In order that this may be the case, however, the charges must necessarily be heavy and similar to those which are generally adopted in the 12-hour systems. The make of gas, of course, gradually diminishes each hour until, during the last hour before restarting, it has sunk to about 10 per cent. of the normal figure.

Blowing-away Poor Gas.—With regard to the regulation of the draw as shown on the diagram, no hard-and-fast rule can be laid

down, and everything depends on the quality of the gas which is being obtained. After the last charge of coal has been put in, the candle power should be carefully watched; and when this is noticed to be dropping, the draw on the retorts must be reduced accordingly. On some occasions, such as when an inferior coal is being used, it will not be found possible to continue the work throughout the 12 hours; and when the candle power fails to any extent, it is advisable to stop the exhauster and blow-away the poor gas. This may be done as follows: The main valve at the outlet of the condensers is shut, and the exhauster man—who is standing by ready—immediately notices the change on his chart. He then shuts down the exhauster, and closes the rider. The doubtful gas which is now being evolved is allowed to escape; and for this purpose a 4-inch pipe is provided at the inlet to the condensers. This escape pipe dips into a seal pot and is sealed to a depth of about ½ inch. At first, the gas will bubble through the seal fairly freely; but as the amount diminishes, care is necessary; for, when all the gas has been evolved, that remaining in the apparatus will cool and form a vacuum, with the result that air will be sucked in at the blow-off pipe. To prevent the possibility of this occuring, the seal is deepened until a pressure of about 1 inch is thrown upon the apparatus.

Prevention of a Vacuum.—The prevention of the formation of this vacuum is probably one of the most important points connected with shutting-down; for serious results might be followed by any intake of air and the consequent formation of an explosive mixture within the apparatus. Probably it will be remembered that Mr. J. Tysoe, in his Presidential Address to the Southern District Association of Gas Engineers (1903) described how the formation of a vacuum was prevented by running back a small service pipe from the washers to the apparatus between the exhausters and the hydraulic main. The amount of gas passing throngh this pipe was quite sufficient to maintain the necessary small pressure, which was prevented from rising above 2 inches by means of a safety seal. Some engineers adopt a method of slackening the levers of the retort lids and permit the surplus gas to blow out this way. But in the method above described the lids are kept sealed and the gas is expelled into the open air. The great disadvantage of slackening the retort lids is that the gas is blown off directly into the retort house itself.

With regard to the diagram, it should be pointed out that the actual charts taken from the gauges have not been reproduced, owing to the fact that each curve would then be on a different chart. The writer thinks that the working is indicated far better by combining the curves on one diagram.

Regulating the Furnaces.—When making a temporary stop, the retort charging is, of course, discontinued during the period and, therefore, a point which must not be overlooked is the regulation of the heat in the settings. The last charge put into each retort is allowed to "stew" during the whole stopping period, and thus a considerable amount of heat may be dispensed with, with a consequent reduction in fuel used. Generally the main dampers on the setting may be closed to about ½ their normal amount, and they are left in this position until 3 P.M., when they should be opened to the usual amount, in order to get up the heats for the evening charges. The primary and secondary air-slides should also be closed—both to about ½ the usual working amount. If the dampers and slides are regulated in this way, it will be found unnecessary to put coke into the furnaces for the whole period of 12 hours—that is, unless the latter are of a very small type.

Diffusion in Holders.—In connection with temporary stopping, the question of the diffusion of gas in the holders is of extreme importance. It is generally taken for granted that, should any inferior gas get forward to the holder, it will thoroughly mix with the better quality gas already therein, with the result that the average quality is quite up to the normal. In some cases, however, there appears to be doubt as to whether complete diffusion does actually take place and, in holders in which the inlet and outlet pipes are side by side, it would appear that the gas (or part of it at any rate) travels at times from one pipe to the other without any admixture at all with that already in the holder. As a matter of fact, the writer has heard of cases of extremely large holders in which the same thing appears to have taken place, even when the inlet and outlet pipes are on opposite sides of the tank. It has been suggested that the warm incoming gas travels directly to the top of the holder, and sets up a current which brings it down almost immediately on the other side.

As regards a water gas plant, there is no doubt that it is an exceedingly useful adjunct in connection with the week-end stoppage, and with its aid the candle power of the gas can be regulated and improved when necessary. In cases of emergency, such as a sudden fog during the stopping period, some works might be placed in an awkward position should they find the demand suddenly increasing heavily after their retort house hands had been dismissed for the day. In most cases the storage would be ample to cope with such demands; but if this was not the case, the utility of a water gas plant is self-evident.

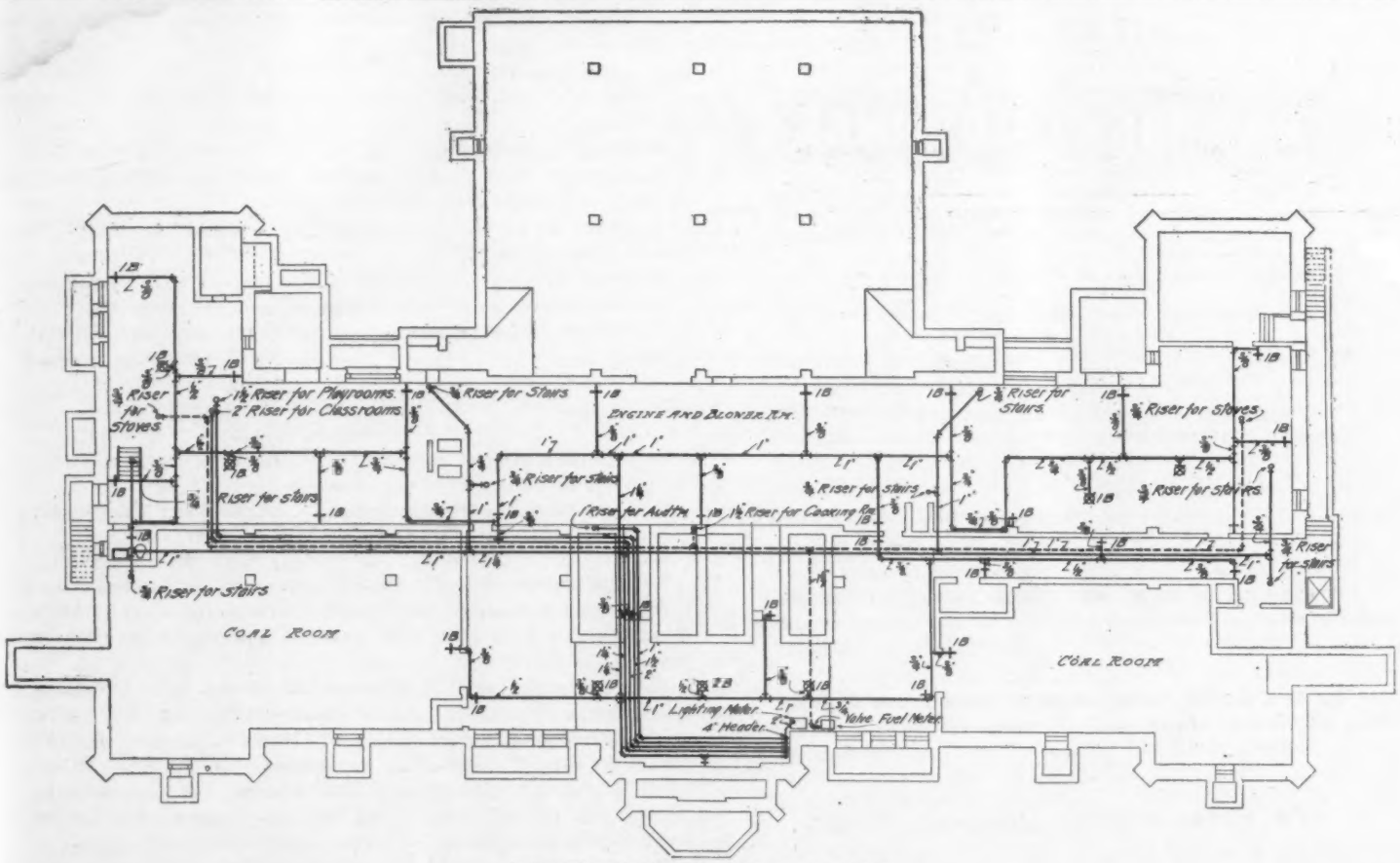
Plan and Description of the Gas Piping in School No. 46, Bronx District, New York City.

[By "HERRINGTON."]

It has been conclusively proven, to the satisfaction of those in charge of New York public school construction, that, while electric light may, and doubtless does afford a most satisfactory means of general illumination, gas lighting not only is advisable but proves an actual economy for use during certain times. For instance, during the cleaning process which is usually done everyday, and generally after the school sessions are concluded, it is necessary for the cleaners to have sufficient light to properly perform their duties. On the other hand a cleaner, sweeping out an aisle of a schoolroom, does not necessarily need to have the entire room illuminated at its maximum brilliancy at that time, and thus consume a most extravagant quantity of electric current in this manner. It may well be asked why the electric lighting is not divided up so as to render the use of smaller portions possible, thus competing in economy with the use of gas, in answer to which it is interesting to state that this experiment has been found to cause such a multitude of wall switches and control panels, with such a complexity of wiring, as to render it quite impracticable. Therefore, it has become customary to install a system of gas piping and gas lighting in the school buildings, and to just what extent this is carried out may be realized by a glance over the following description in which School No. 46, one of the newest Bronx structures of considerable size, has been taken as a typical example. This building was designed, and the gas piping laid out, under the direction of Mr. C. B. J. Snyder, School Architect and Superintendent for the Board of Education, New York city.

As shown in the illustration (a cellar plan of the school) the gas supply for the building is furnished through two meters, one of which is for the fuel gas, the other for the lighting supply. The fuel gas meter supplies a 1¼-inch line, which branches into a 1-inch horizontal run, extending toward the right, supplying a ¾-inch riser to the gas stoves in the teachers' room, on fourth floor, and a 1¼-inch horizontal branch which supplies a 1¼-inch riser to the cooking room on the fourth floor, and a 1-inch horizontal run over toward the left to a ¾-inch riser for the gas stoves, on the left hand side of the building, which are located in the teachers' rooms on the first and second floors. The gas sto ve equipment in the cooking room consists of 2 standard, 4-burner gas ranges, and 13 two-hole stoves (arranged around a hollow counter) for class use. These gas stoves are nickel plated, 2-hole stoves, with brass gate valves and stopcocks to the hot plates, these supplies being also connected through a brass union. Quick closing valves are placed on the main branches to these stoves in the cooking room. The gas ranges in the cooking room, fourth story, are two in number, similar to the Jewel No. 190, supplied through a ¾ inch connection, and hooked up with the required length of Russia iron pipe, fittings and damper. For the gas stoves and ranges in the cooking room connections are made to the 1¼inch riser, through gate valves located at the ranges. On this line connection is made, below the floor of the fourth story, with a tee-branch and 1-inch wrought iron pipe, which is extended to a point under the students' counter, from which 1-inch risers, with composition sliding stem and lever gate valves are installed, with 1-inch lines running under the projection of the table tops. On these 1-inch lines are placed 1-inch by ½-inch fittings and pipes, which terminate with double outlets with brass hose cocks (female). The double cast iron stove stands, provided with gas burners, are furnished with students' tables. In each of the teachers' rooms is set and connected a nickel-plated, 2-hole gas stove, the branch supplies to which are equipped with brass gate valves and connected to the stoves with brass unions.

From the lighting meter a 2-inch branch is extended to a 4-inch header, from which all lighting branches are taken. These branches consist of a 1-inch supply to the auditorium; a 1¼-inch to the play rooms; a 2-inch to the classrooms; a 1¼-inch to the stairs; and a 1¼-inch to the boiler room. Both the 2-inch meter connections to the header, and all the supply branches leading therefrom, are provided



Cellar Plan, Public School No. 46, Gas System.

with valves at the header. These branches, shown in the illustration, are hung mainly from the cellar ceiling and in the cellar, supply burners totalling 35, distributed in the boiler, engine and blower rooms. The wall outlets on this plan are indicated by cross marks on the pipe and the ceiling drops are shown by circles with crosses. The lettering 1*B*, 2*B*, etc., is used to indicate the numbers of burners on each outlet. In the basement (which is the floor located immediately above the cellar and is practically at the ground level) the distribution gas pipes are in general located on the top of the first story floor beams, with drops to 57 burners in the playrooms and toilet room; 26 more burners are located on the stairways and in the entrance corridors, 16 being in the auditorium. Above the basement is the first floor, consisting of classrooms, Principals' rooms and two Kindergarten rooms, the gas distributing piping for this level being in general run on the top of the second floor beams, with drops to the outlets similar to the first floor, the outlets consisting of 54 located in the class rooms and corridors and 12 on the staircases.

The second floor, which is divided into 14 classrooms, has the gas distributing piping run on the top of the third story floor beams, 53 burners being provided in the classrooms and corridors and 12 on the staircases.

The third floor of the school comprises a gymnasium, workshop and 10 class rooms. The distribution on this floor is run on the top of the fourth floor beams, 49 burners being distributed through the rooms and 12 provided for the stairways.

On the fourth floor is located the cooking room and science room, together with 10 other class rooms. Here 52 burners are located in the classrooms and corridors, and 7 on the staircases, the burners in the cooking room being supplied from the fuel system by a 1-inch riser and two ¾-inch risers, as previously mentioned.

The outlet, at the floor under the demonstration table, in the science room, on the fourth floor, is supplied from the lighting system, and is extended as follows: All the gas piping and fittings at this table, and above the floor line, are entirely of brass, and where the iron and brass pipes connect together at the floor an insulating joint is placed. The outlet is fitted with 2-way, pillar-body, single, brass, hose cock (female) on the top of the table, and on the riser is placed a brass gate valve. There are also two gas burners located in the pent house on the roof, and one burner located on the stairway leading up to this level.

Valves are not only provided at the distributing header in the cellar, as previously mentioned, but also at the base of each rising line, which valves are of brass, gate-type. No pipe is used less than ¼-inch in diameter, and all short branches of ¼-inch and ¾-inch gas pipe, together with all outlets, are made of extra heavy pipe. The lines on each floor are controlled by a separate gate valve, located at that floor, and are properly dripped. Brass gate valves are also located so as to control each section of the building, and a special valve is provided to control the auditorium. The valves are tagged throughout with metal tags, and a printed directory is framed and hung near the gas meters. Where ceiling outlets are used they are made ½-inch in diameter, and are extended 2 inches below the ceiling for fixture attachment; the outlets for the brackets in the playrooms and pupils' water closets being located a distance of 7 feet above the floor. In the classrooms and teachers' closets 6 feet and 6 inches above the floor, bracket outlets have ell and tee connections provided with lugs which are secured to the brick walls with expansion-bolts and to the terra cotta partitions with toggle-bolts. Where drops are taken off horizontal lines, bent pipes are used in every case, and the connections of branches with the mains are made with malleable iron right-and-left couplings. The pipe used is of the best quality wrought, galvanized on the outside only, while the fittings are heavy malleable iron, beaded and galvanized. Where pipes of different sizes come together proper reducing fittings are used and bushings are not permitted anywhere on the work. Wherever possible Y's and 45° elbows were used instead of straight tees. The pipe and fittings were put together, after being reamed, with screw-joints and red lead, gas fitters' cement not being allowed.

Knighthood for Mr. Corbet Woodall.

The *Gas World*, of the 4th inst., declares that its readers will have observed without surprise that the New Year's list of honors, published on Wednesday, included a knighthood for Mr. Corbet Woodall, Governor of the Gas Light and Coke Company. The most prominent man in the gas industry to-day, the particulars of Mr. Woodall's career are so familiar to our readers that it is unnecessary to recapitulate them here. In addition to the Governorship of the largest gas undertaking in the world, Mr. Woodall holds at the present time the Presidency of the Institution of Gas Engineers, of the Society of British Gas Industries and of the British Commercial Gas Association. He is also Chairman of the Tottenham and Edmonton

(*Continued on page* 66.)

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NOTICE TO ADVERTISERS.

New Advertisements and changes of copy therefor should be in hand Wednesday noon of week prior to date of issue.

NEW YORK, MONDAY, JANUARY 27, 1913.

[Official Notice.]

January Meeting, New England Section, N. C. G. A.

To the Members of the New England Section, N. C. G. A.: The regular meeting, to be held Monday evening, January 27th, at Wesleyan Hall, 36 Bromfield street, Boston, will commence at 8 o'clock. This Section has made a splendid advance during the past two years, and there is no reason why it should not continue. The Committee on Programme has given careful study to the subjects to be presented this year, and will make it interesting to those who attend the meetings.

The first innovation will be a stereopticon lecture on "Industrial Gas Appliances," by Mr. John M. McMillin, of the Improved Appliance Company, New York. At the close of Mr. McMillin's talk the members will adjourn to the appliance rooms of the Boston Consolidated Gas Company, 24 West street, where a full line of fuel appliances will be on exhibition, and a further talk and demonstration will be given. Several important questions have beea sent in for discussion and will be read at the next meeting.

The fact that we have but nine regular meetings in the year is, when you stop to think of it, a very small demand on the time of each member. Can you make it a rule to devote these nights to keeping active the organilation? Begin right by reserving this date on your memorandum book, so no other engagements can later interfere.

Smoking will be in order; and, as usual, cigars will be passed around.

Truly yours,

A. J. Connell, Sec'y. C. G. Goeltz, President.

[Official Notice.]

Forty-third Meeting, New England Association of Gas Engineers.

New England Association of Gas Engineers.
Office of the Secretary,
January 23, 1913.

The Forty-third Annual Meeting of the New England Association of Gas Engineers will be held at Youngs' Hotel, Boston, on Wednesday and Thursday, February 19th and 20th, 1913.

The meeting will be called promptly at 10 A.M., Wednesday. The programme for that day is:

Lecture on "Electrolysis," by Prof. A. F. Ganz, at 11 A.M.
Paper on "Accounting," by Mr. F. P. Royce, at 2:30 P.M.
"Notes on Chemistry of Gas Coal," by Mr. Edward F. Wilson, at 4 P.M.

Thursday.

Paper on "Coal Gas? Surely: But How?" by Mr. R. P. Brown, at 10 A.M.

Paper on "Gas Lighting," by Mr. R. F. Pierce, at 11:30 A.M.

Material for the "Question Box" should be sent in to the Secretary as early as possible.

Applications for membership should be in the Secretary's hands before February 18th.

Members will dine together Wednesday evening. Please bear in mind the importance of prompt attendance at the sessions.

All friends of the Association are cordially invited to attend the meeting.

N. W. Gifford, Secretary.

[Official Notice.]

National Commercial Gas Association.

Office of the Secretary and Assistant Treasurer,
29 West 39th Street,
New York, January 22, 1913.

To the Members of the National Commercial Gas Association: This is to advise you that, at the Atlanta Convention, recently held, our Constitution and By-Laws were changed and approved by the members.

The new fiscal year of the Association started as of December 1st, 1912. Hereafter, applications for membership must be accompanied by the current year's dues of $5, and also an initiation fee of $5, except in the case of individuals connected with Company Members, who application will be received and accepted, if accompanied by the current year's dues, the initiation fee in such cases being waived, on account of their company holding a membership.

Therefore, will you kindly bear in mind that, in inclosing applications for membership, to state to such prospective members that, unless they are employees of Company Members, an initiation fee of $5, and the annual dues of $5 must accompany the application.

Will you use your best efforts to increase the membership this year? There are many of your friends who are not members; but, being eligible, would welcome the opportunity of joining, if such were presented to them, and it is hoped you will lend your support to this movement.

Yours very truly,

Louis Stotz, Secretary.

[Official Notice.]

Fourteenth Meeting, the "Gas Meeters."

Office of the Secretary,
New York, January 15, 1913.

The fourteenth meeting of the "Gas Meeters," New York Section, will be held at Kalil's restaurant, 14 Park Place, New York, the evening of Thursday, January 30, at 6 o'clock.

Dr. Arthur H. Elliott, consulting engineer, author and lecturer, will deliver an address on "Heat Units, Candle Power and Pressure." The usual dinner will be served at $2 per plate.

Very truly yours, H. Thurston Owens, Sec'y.

BRIEFLY TOLD.

Death of Prof. T. S. C. Lowe.—When, on the morning of the 17th inst., in the home of his daughter (Mrs. E. L. Wright) South Euclid avenue, Pasadena, Cal., death ended the earthly career of Prof. Thaddeus S. C. Lowe, a lifetime was ended, the happenings in which were many and wonderful. His death is traceable to the effects of an accident that befel him, December, 1911, while on a visit to two of his daughters, residents of Norristown, Pa., in which Pennsylvania city, 43 years ago, he succeeded in adapting, to the point of making these commercially practicable, the idea that resulted in the subsequent revolutionizing of the general practice of gas manufacture in the States. He is survived by three sons and five daughters. The funeral services were held in St. James Church, South Pasadena, Cal., the afternoon of Saturday, the 18th inst., and interment was made in Mountain View Cemetery, South Pasadena. We have in course of preparation a suitable monograph regarding his really wonderful career.

EXCERPTS FROM SIXTH ANNUAL REPORT, PUBLIC SERVICE COMMISSION, NEW YORK STATE.—Mr. J. S. Kennedy, the clever, indefatigable Secretary of The Second District, about mid-month prepared a short summary of the contents of the document under consideration. Naturally enough, Secretary Kennedy's references bulk decidedly over the records of the railway and telephone companies, but he did point out that the records of gas and electrical corporations (108 in number) showed that, of companies having gross operating revenues exceeding $25,000 each per annum, the gross operating expenses increased from $26,298,163 (1908) to $33,681,369 (1911). The income from operations increased (same period) from $9,798,882 to $12,618,479. The total number of gas making companies in the State is 178; 58 are in the natural gas supply; 29 supply acetylene gas from central stations; and there are 18 of the gasoline sort. The Commission suggests that the requiring of gas corporations and electrical corporations having revenues of less than $5,000 a year to make reports to the Commission is a burden which should not be put upon these companies. There are about 100 such companies in the State, and of this number 25 receive less than $1,000 per year gross revenue. It is recommended that jurisdiction be retained in respect of service, rates, and the exercises of franchises, but that the companies be relieved from the onerous burden of making reports from data, that are necessarily meager and difficult for inexperienced men to keep. From the brief submitted by Secretary Travis H. Whitney, for the First New York District, for the 12 months ended December 31, 1912, the sum paid for gas and electric currents by the public amounted to $60,581,760, or about $12 per capita. The capitalization of the companies (gas and electric) amounts to: Gas companies, $210,952,600; electric light and power companies, $136,968,751. The quantity of gas manufactured is returned at 43,297,216,000 cubic feet; electricity generated, 589,778,573 kilo-watt hours; the number of gas consumers was 1,286,717, an increase of virtually 50,000 for the twelvemonth. During the year the Commission tested 400,920 gas meters and 3,061 electric meters—a total 1,984,456 gas and 3,830 electric meters being tested since the organization of the Commission, July, 1907. Of those tested during the year 3,830 gas meters, and all the electric meters, were tested upon complaint. The Commission during the year prescribed regulations for gas pressure in Manhattan, and began proceedings looking to the extension of such regulations to the other boroughs of the city. The 80-cent gas law contained a provision for the regulation of pressure in the mains, but this provision was held to be void by the Supreme Court of the United States in passing upon the constitutionality of that statute. The Public Service Commissions Law, however, gives the Commission power to regulate such pressure. In 1911 the Commission wisely retained Mr. William A. Baehr, who, early in 1912, submitted his report which showed wide variations and in some cases excessive variations in pressure. With this report as a basis the Commission conducted hearings to determine whether pressure regulation was necessary, and if so, to what extent it should be imposed. "After the hearings an order was adopted providing that the pressure of gas supplied in the Borough of Manhattan, as measured at the consumers' end of the companies' service pipe, should not be less than 2 inches or more than 6 inches water column; that the maximum daily pressure variation ultimately should be reduced to not more than 2 inches water column; that the maximum momentary variation should not exceed 8-tenths of an inch water column, and that the maximum pulsating variation ultimately should be reduced to not more than 5-tenths of an inch water column. Ordinarily, gas pressures are measured in inches or tenths of inches water column, meaning the pressure required to balance a column of water 1-inch high. Gas is usually distributed under relatively light pressure as compared to the pressure used, for instance in the distribution of water. One-inch water column is equal to a pressure of 0.578 ounces per square inch, and thus 6 inches water column represents a pressure of only a little more than .2 of a pound per square inch—a very small pressure in the ordinary sense of the word. With burners and appliances in general use efficient operation may be obtained at any pressure between 1½ inches and 6 inches water column. By fixing the minimum at 2 inches water column, and the maximum at 6 inches, the Commission believes that ample leeway is given the companies to maintain a proper pressure."

"THE GAS MEETERS," NEW ENGLAND SECTION.—At a meeting, held in Boston recently, the New England Section of "The Gas Meeters" was formed. The following named gentlemen were present:

Goeltz, C. G.	Gifford, N. W.	Ripley, E. F.	Swan, L.
Geffine, L. W.	Pizer, T. H.	Roberts, F. M.	Thompson, R. M.

Mr. F. M. Roberts was elected Chairman, and Mr. Fred. K. Wells was chosen Secretary and Treasurer of the Section for the first year. The first dinner will be held in the City Club, Boston, January 30th, at 6:30 P.M. An invitation is extended to all gas men or gas appliance men who may be in or near Boston at the time. All will be welcome. We are indebted to Secretary Wells for this information, and he further remarks, "The outlook is very promising for a large attendance.

CURRENT MENTION—

MR. SAMUEL K. CAMPBELL, since 1907 General Superintendent of the Nassau and Suffolk Lighting Company, with headquarters in Hempstead, New York, has resigned from the service of that corporation. He leaves here the 1st prox., for a 30-day visit to Philadelphia. Mr. Campbell assumed charge of the named Company's plants at a time when the affairs thereof were in a decidedly chaotic condition; but his excellent engineering attainments gradually brought order to the fore, his methodical business ways kept the Company's trading in way of really marvelous growth (since his advent its output has increased at least 5-fold), and his personality gained it public favor on every hand. Wherever he goes or his travel may carry him, its route is sure to lead him to broader and larger business fields.

"PROMOTION worthily won," did you exclaim? Nor can there be the slightest doubt about it, which introduction is a fitting prelude to the announcement that Mr. Alonzo P. Ewing, formerly New Business Manager and Purchasing Agent of the Detroit City Gas Company, has been appointed Assistant General Manager of the corporation, working in conjunction with Vice President and General Manager Irvin Butterworth. Mr. Ewing entered the service of the Company (1901) as a clerk, and, by display of sheer merit, has gone on successively and speedily to the named important position. Merit may not be repressed in a progressive corporation; and that the Detroit City Gas Company certainly is.

WE regret to have to record the death of Mr. Lumsden, Supt., Catonsville plant of the Baltimore Consolidated Gas, Electric Light and Power Company, who died the evening of Thursday, the 16th, after an illness that lasted a long time, and during which time he was on the payrolls of the Company. Deceased was born in Baltimore, January 20, 1860. He was educated in the public schools of Baltimore, and in 1878 entered the service of the Baltimore Consolidated Gas Company, acting as office boy. He kept going on conscientiously with his work, and in due time became Superintendent of the Catonsville plant.

SUPERINTENDENT H. K. MORRISON, of the Brockton (Mass.) Gas Light Company, is in the market for a coal gas plant up to a daily output of 1 million cubic feet. The outfit is to include a holder up to retaining 1 million cubic feet.

Publications.

[All Publications, Catalogues, etc., mentioned below, are kept in our office for the convenience of our patrons.]

Library Bulletins.—Anyone interested in civic activities would do well to examine the work of the Newark (N. J.) Public Library, under the direction of Mr. J. C. Dana. A public institution may have many activities of great public value, but these are greatly enhanced when such good works are made known to the public. The "Newarker," a monthly bulletin of the library, should go a long way toward meeting the demand for information, not only in regard to civic activities, but also as to the data and information available for business houses to assist them in the manufacture and marketing of their products.

Service Regulation.—A compilation and analysis of public utility regulation laws of the United States. This section of the data was gathered by the Department on Regulation of Utilities, National Civic Federation, and contains nearly 70 pages of matter. It is divided into 12 sections, all of which have a direct or an indirect bearing on the operation of gas properties.

Rate Discrimination.—Another section of the compilation referred to above, covering discrimination in rates and service.

Eclipse Rays.—If men read as they go they will be impressed by "Eclipse" explanation of certain wares, as outlined in the monthly publication issued under the above title by the Eclipse Stove Company, Rockford, Ills. A feature of the 1913 line will be blue enamel doors, the color being reproduced in the bulletin; and, what is more important, the reason for selecting this color is explained. Get a copy.

(*Continued from page* 63.)

Gas Company, a Director of the Imperial Continental Gas Association, of the Croydon Gas Company, of the British Gas Light Company, and of a number of other gas companies; and, in conjunction with his son, Mr. Henry Woodall, is in extensive practice as a consultant in gas and other affairs. While holding these numerous appointments, and discharging the duties of them with high efficiency, he has found time—how it is done it is hard to tell—to attend to matters of public concern unconnected with the gas industry. By family tradition and by political conviction, he is a Liberal in politics, and is at the present time Chairman of the Bromley Liberal Association. He was recently appointed a Justice of the Peace for the county of Kent, in the Chislehurst district of which county he resides. The distinction now conferred upon him by his Majesty, following as it does on the honorary degree of D.Sc. received from the University of Leeds a month or two ago, comes opportunely in a year in which there are to be celebrated the centenary of the commercial application of gas on a large scale and the jubilee of the Institution of Gas Engineers. Our readers will join with us in extending hearty congratulations to Mr. Woodall and in felicitating also the industry with which he has been so long and so honorably associated.

Gratuitous Work for Consumers: The Reasons, Precautions and the Remedies.

[Prepared by Mr. E. C. Weisgerber, Cedar Rapids, Ia., for the Eighth Meeting, National Commercial Gas Association.]

When this subject was originally assigned, it was entitled, "How Far Should a Gas Company Go Toward Doing Gratuitous Work for the Consumers." In looking into this subject the first question that arises is, what is gratuitous work, what does it really mean and comprise, what is the real reason for it, what precautions ought to be taken in reference to it and what are the remedies possible? Hence the change in the subject. The subject itself is of vital interest to every company, gas, electric, water, etc., and when we take into consideration the amount of money expended each year by the different utility companies, in some cases absolutely necessary and with the very best of results, while in others extremely injudicious, we find the subject of gratuitous work is not only a weighty one, but one which has two sides; on one hand the company, on the other the consumer.

In looking over the uniform system of accounts for gas companies, as established by the American Gas Light Association, gratuitous work is described as an account to show the cost of all free work done for consumers in the maintenance of piping, fixtures, burners and appliances in use. It includes all complaint work done in houses beyond end of meter (or governor) and outlet connection, such as adjusting Welsbach lamps, cleaning burners of all kinds, changing the position of gas stoves and appliances, overhauling appliances of all kinds, repairs to all kinds of piping, fixtures, etc. In other words, all work done gratis for the consumer in order to give him the very best of service, and to adjust all appliances so that they are working in a most efficient and economical manner, from the view of both the consumer and the company. Some companies even go so far as to furnish, gratis, gas ranges, heating stoves, piping, services, fixtures, burners, etc.; in fact, nothing is considered a barrier toward getting consumers to burn gas. Taking all these things into account, local condition will be a great factor in considering this subject; competition, especially.

Let us first consider why some gratuitious work is really necessary. From the public utility company's standpoint the average consumer knows very little about taking care of the appliances, burners, etc., of all kinds; and where there is competition it is, as a rule, necessary to do some gratuitious work in keeping the appliances in first-class condition, as it is always easier for the competitor to get in where the consumer is not taken care of. Therefore, local conditions of all kinds being taken into consideration, some gratuitious work is always necessary, and the main subject is then, how far should we go?"

When this subject was assigned, the writer wrote to a large number of gas companies throughout the country, asking these 4 questions: "How far does your company go toward doing gratuitous work for consumers?" "Where do you find most of your troubles?" "Have you ever done any special campaign work *in re* this subject?" "Have you any special forms?" Out of 103 replies, but 3 companies did nothing at all (2 of them being municipal plants); 2 companies did no free work of any kind, but when complaints came of poor service, appliances not working properly, the complaint was adjusted the first time gratis; but a charge was made for both time and material on the second call, regardless where the trouble lay. Eighteen companies gave free gas ranges, services, heating stoves, Welsbach lamps of all kinds, and loaned arc lamps, as well as manufacturing appliances, gratis; while 11 companies, besides loaning appliances, lamps, etc., maintained them gratis. Some of the replies were of a nature which stated that they placed absolutely no limit on what free work was being done, while others did absolutely nothing, even charging for setting meters.

Let us look over some of the replies from companies who placed no limit. One states, "We make all gas connections, such as for water heaters, gas ranges, etc., absolutely free, no matter how long a run. We maintain all our arc lamps free of charge and furnish all mantles and glassware free." Still another writes, "We connect free all of the larger appliances, such as ranges, water heaters, hotel and restaurant appliances and furnish 20 feet of piping free for each arc lamp installed, connect free all ranges sold by dealers, all automatic heaters and stoves sold by plumbers, and even go as far, in order to get consumers, who are too poor to afford to pay for installations, a service, a 2-hole hot plate, a cheaply constructed table to place it on, 2 open flame, 1-light drops." Still another writes "We stop at nothing. We furnish free of charge common incandescent burners, 4 to 6 to a family; we also furnish, gratis, each year to all consumers desiring same, free heaters, as well as loan gas ranges in the summer months." "We stop at nothing," another company states, "and will install anything in order to get and keep business." Another, "We have been supplying gas lamps and renewals free for stores and business places." And another, "We furnish 2 or more arcs or 2 or more reflexoliers free." So much for the liberal ones; and then again we have, "We do nothing, we have one price for rich or poor, Jew or Gentile, city or town; we sell our gas cheap and that is enough." And so on, that when a paper is considered no two replies are alike.

Therefore, let us take into consideration what results some of these companies claim they attain. An increase in consumption, in some cases a gain of a new consumer; but, in the end, does not this very liberal policy tend to give the consumer a feeling that there must be a big profit in gas itself? "Nothing for nothing" is and always will be the slogan wherever we go, and it is but human nature to look askance at something we get gratis. A number of replies were received from companies who had been very liberal, but had now come to the conclusion that the more they did the more was expected, and have discontinued the giving away of apparatus, etc., entirely.

On taking hold of the Company at Cedar Rapids, we found a strong lack of goodwill, with a gas rate case on our hands, and, after due consideration the following postal card was delivered to each home:

Cedar Rapids Gas Light Company—We Want Your Complaints.—Your gas lights and gas range should work perfectly. Nothing less should satisfy you. Give us a chance to put them in the best possible shape for you. Our special men are at your service to adjust your lights, range or water heater without any charge to you. In case any material is needed, we will charge only our regular retail prices for it. It is our desire to give only the best of service to our consumers, and you will greatly assist us by filling in the attached card. Therefore, should you have a gas complaint of any kind, notify us at once by means of the attached postal. In case it is more convenient, you can leave this card at our main office in Cedar Rapids or at our branch office in Marion and it will be given prompt attention. Our 'phone number is 227. Please indicate your requirements.

1. Does the condition of your gas lights satisfy you?.....
2. Does your gas stove work properly?.....
3. Do you have any trouble with your gas water heater?.....
4. Do you wish our special man to call and locate your trouble, without charge to you?.....

Name.....

Address.....

The city was divided into districts and 4 months taken to deliver the postals. A cent stamp was required on the part of the consumer. This proved most excellent, as we were able to convince the people that we wanted to help them, etc. Out of 5,000 cards we received about 800 replies. Our regular complaint men were sent out on this work and this helped change the sentiment toward the Gas Company

wonderfully. Again, I know of other plants, for some reason or other, in which this has failed utterly; therefore, location and conditions must first be considered.

Let us now, first, consider the reasons for gratuitous work. Each year we spend large sums to improve our manufacturing apparatus, our distribution systems, etc., therefore, we cannot leave all the rest to the consumer. When we sell gas we also sell service, good service, and though our gas is of the highest quality and our service of the best, still if the consumers are not taken care of all the rest is in vain. We must, therefore, see that the consumer gets the very best of service we are capable of giving, and that he uses his appliances in an economical and efficient manner. The main question is, therefore, how far shall we go toward attaining that end? The consumer's usual attitude toward a public utility is not of the kind which feels that he is getting something for nothing, that it is only with the best of feeling that we are doing free work for them. The feeling is always that there is a "Nigger in the woodpile" some place. When a public utility company does free work, the tendency is the more it does the more they want. We have constant and apparently unnecessary complaints under the head of poor gas, or no gas, to which we must attend or lose a consumer, and there are some things that we must do.

Therefore, let us consider the reasons for gratuitous work, the why, wherefore, etc. The truth is most of our trouble work is on account of ignorance on the part of the consumer in reference to his gas appliances, due to improper adjustment, etc. Then, again, there is the poor light complaint, the burner not giving sufficient light to satisfy the consumer; maybe the lamp needs a new mantle or adjusting. Again, this is ignorance on the part of the consumer. Then there are petty leaks, a loose cock, a burner orifice plugged, etc.; in fact, 101 other things, and when we think to bring this matter to a concrete form and ask, "Who is really at fault on account of all these complaints?" If we think and analyze this subject deeply there is but one answer, "Ourselves." Why? everyone will ask. The answer is, we have not taken the precautions, we have not done the thing right in the first place; we, ourselves, are at fault, for the major part of all the gratuitous work we must do in the end. Our endeavor has always been and is to eliminate all these many complaints to materially improve our service, and at the same time increase our field of operation, etc.

Now, let us consider why it is our fault. Have we as a body supervised and thoroughly gone into the subject of the appliances, burners, etc., which have gone into our consumer's home? Have we as a whole tried to standardize the gas burning appliances? Have we as a whole gone into the subject of mantles the way we ought? No, you will say. Again, have we tried everything possible, when the consumer first started, to educate him? Have you demonstrated to him the hows, whys and wherefores of his gas range, his lights, etc.? No, in most cases; yes, in a few others. Have we not been a little too careless where we have to do so much gratuitous work at the beginning! Yes, and the fact is we really started the consumer wrong; now we must spend money to get him back on the right track. As a fact, 99 per cent. of the gratuitous we do could have been prevented if we started the consumer right in the beginning. By gratuitous work I do not mean free services, ranges, etc., as that is a matter of local condition or policy; though it is free work, still it is not necessary as it is only done to further new business interests. Real gratuitous work means free work necessary to hold and to keep a consumer.

Let us now consider a remedy. In the first place we buy gas ranges to sell our consumers, through which they use our gas. We sell burners, mantles, water heaters, in fact all kinds of gas burning apparatus. We pipe houses, set meters, run services, all for the same purpose—"to take care of the consumer's needs." Then let us begin with the service and see how we can prevent, after the service is laid, doing free work. First, we must use the best of materials and have experienced help to lay them, help who take due care there are no traps and leaks and that the service is of sufficient size to take care of the consumer's needs. Then comes the meter. We must have one of ample size, in good condition and corrected right. We must, therefore, have the right kind of help to do the work properly.

Then comes the house piping, one of the greatest sources of gratuitous work. Do we always in every place establish rules? Do we see to it that the plumbers are using pipe of sufficient size, that there are no pockets or stoppages, and that the job is tight? Yes, we do in some instances; but in others the attention is relaxed. Let us first consider the gas ranges.

Is it not a fact that much of our complaint work is also due to the gas range, from some cause or another. Then let us consider the cause. In the first place have we seen that the ranges we handle are of the very best make, the finest of workmanship, made by people of responsibility? Have we investigated how the range will bake, how the burners work and the material and workmanship in it? No; the average man has forfeited quality for quantity, much to his detriment now. Are we not now trying to standardize our gas ranges? Yes, we are now at this meeting; but why? The answer, because we found we had troubles, which meant free work. Hence, is this not so about other appliances?

Does each and every company know what a gas mantle is really made of, why the difference in the price, and what the quality really is? No, again! Does each and every company go thoroughly into the burner subject, or does it just handle a burner or arc lamp because of the mere thought it is good? And, so on down the line, even to the water heaters; does the average gas company try to standardize the water heaters that are being sold? Yes, of late some of them do, with excellent success. Therefore, the one remedy is a general standardization of all gas burning appliances, primarily. When we purchase gas ranges we must purchase quality not quantity. We must try our best to give the consumer the best for his money and the best for him in the end. A cheap and unreliable gas range is our worst enemy in the end.

We must standardize our burners, our mantles, our water heaters and familiarize ourselves so that when we do buy we know what we are buying. There are too many cheap, unreliable stoves, burners, mantles, water heaters, etc., on the market; they are made only to sell, not to use. This is true. You will say that, even if a gas company did follow out these precautions, there would be trouble from appliances sold by local dealers. Yes, but co-operation, such as is now being worked in a number of cities, is the only answer.

I know of a city which has standardized for over 2 years its water heaters, ranges, etc. It is impossible for a water heater not sanctioned by the gas company to be sold, and with what result? With over 2,000 tank heaters in use there have been but 36 complaints in 1 year. Is that not a wonderful showing? The same way with gas ranges.

They made a thorough investigation of the merits of each type and make of range, then concentrated their efforts on the ranges they knew would give the consumer the very best of service in every respect. The same was done with mantles, burners, etc. With what result? They are selling more gas per capita than any other company in their State.

A better feeling exists towards their company than was ever known before; all because they gave the consumer what he ought to have and what he needed, not what he wanted or thought he needed. They sold service and brains with each installation.

They have working agreements with all the plumbers, dealers and real estate men in regard to water heaters, gas ranges, house piping, mantles, burners, etc. In fact, nothing which is sold by them is kept away from the other dealers. They have co-operated with them. With what result? The dealers, etc., can get a better price, on account of centralizing their buying to the gas company, and in turn the gas company is getting a better price, because it is buying in larger quantities. In this way they have standardized their gas appliances and reduced their gratuitous work to a minimum. For exemplification of the co-operation plan, let us go over one or two specimens; water heaters, first:

All the plumbers were called together at the Company's request and the following agreement made: That the plumbers agree to use only the two makes of water heaters, bought by the Company. In turn the latter was able to give them a price way below that which they could buy them. A certain selling price was then established and lived up to by all parties concerned. The Company agreed that the plumbers should set all water heaters sold at a stipulated price per foot, so that there would be no overcharge. In turn, all plumbers agreed to abide by our specifications, and no job was accepted unless passed upon by the Company's inspector.

A bonus plan was also agreed upon *in re* automatic heaters, and the plumbers in turn made working agreements with the architects. Now, let us see how this has worked out. Excellent, is the answer. We have each and every one of them boosting for the Gas Company; they have eliminated all inferior water heaters; also all trouble with labor unions on account of the water connection. They have placed this work in the hands of competent men who are responsible. In turn the plumbers and architects see that a water heater is specified

in the plans of each new home and building, because it is to their advantage. The Company has standardized and has reduced its gratuitous work.

With gas ranges, this Company has signed up all plumber dealers, furniture stores, etc. They sell them at the same price as the Company, which in turn sold them the ranges at practically cost. When stoves are sold under these conditions the plumbers do the connecting at schedule prices. The real estate dealers are also signed up on their standard ranges.

With mantles, burners and fixtures the same kind of agreements are made. Now, have they not standardized our appliances? They have, and with what result? Every one of the consumers hnows that he is now buying quality, not quantity. They know the appliances are of the best and that they are sold to them because they mean efficient and economical operation. They are installed under the proper conditions, by people who know and are responsible, and the complaints are reduced to a minimum, because the thing was done right in the first place. The Company finds no need of doing free work, as the consumers know and feel they are getting a sqnare deal and the very best for their money.

Now you will state that there is something else lacking; yes, this is true, a whole lot more. In the first place, proper installation done by the right kind of supervision and rules. Then, at last, the right kind of instruction to the consumer on the start. One of the very finest ways, the cheapest and the best in every respect, is to educate your help. It is woeful how ignorant some help can be in regard to their own line. I know fitters who have worked for years that do not know how to use a broiler properly, all because no one taught them; that is why. And it is their superior's fault, then. Therefore, with these conditions, how can the consumer be started right? Only through educating our employees. There is no better way than by "Employees' Meetings." They cost at the most a few cigars, a light lunch at times, and their superior's time.

I know a number of companies who reduced their complaints to a minimum through this plan. Once a week, sometimes only once a month, they call their help together for a meeting. There is no telling of jokes or hobnobbing; it is a school for education; either the manager, some well-informed representative or visiting engineer, lectures to them upon one subject. After the lecture they ask questions, and in the end each man is more familiar and knows more about the business. He has learned something for the few hours thus spent. It creates a feeling that there is a higher place open for them, and it means knowledge, and to gain knowledge means study. Therefore, as you educate your employees you educate your consumers and reduce your complaints to a minimum.

Another most excellent plan is through personal demonstration; but the demonstrators must know how themselves. We make it a practice, following each gas range sale and its installation, that the fitter instructs the consumers how to manipulate the range in every respect. The following day our lady demonstrator calls. She knows how to use a gas range economically and efficiently, and is there to teach the consumer. In two weeks a second call is made and any stray information gathered; with what result? The consumers know and feel that we tried everything possible to give them the best of service. They have been instructed; in other words, educated. And with what result? A large number of petty complaints, which are such a bane to the companies, are taken care of by the consumers themselves, hence reducing our gratuitous work and making ideal conditions.

If these details are carried out there is no need of any special gratuitious work campaigns, which cost money and create a feeling that there are complaints, and so have people imagine they have poor service, etc. Therefore, it is the firm belief of the writer, if we take the right precautions at the beginning, that though we cannot be without gratuitous work entirely, we can reduce it to a minimum of the lowest mark. The subject of free services, free gas ranges, etc., are solely due to local conditions and being done for new business solely, therefore, should not be considered as gratuitous work.

From Syracuse, N. Y., comes the news that Mr. C. F. Leonard, the clever gentleman who acts in the capacity of Gas Engineer to the New York Public Service Commission, up State district, is making an investigation of the plant of the Ithaca (N. Y.) Gas Company, and the general condition of affairs respecting that corporation's dealings with the public. The investigation is being made at the direct instance of the Company.

Portland Cement Production in United States, 1912.

According to returns received by the United States Geological Survey up to January 15, 1913, it is estimated by Ernest F. Burchard, of the Survey, that the total quantity of Portland cement manufactured in the United States in 1912 was approximately 81,941,998 barrels. It is believed that this estimate is within 1.5 per cent. of the exact figure. This quantity represents an increase of 3,413,361 barrels over the 78,528,637 barrels manufactured in 1911, or 4.3 per cent. The shipments of Portland cement during 1912 are estimated at 84,750,291 barrels, compared with 75,547,829 barrels in 1911, an increase of 9,202,462 barrels, or 12.2 per cent. The production in 1912 was thus held in check sufficiently to permit a material reduction in the stocks of cement at the mills at the close of 1911, which amounted to nearly 12,000,000 barrels.

The continued increase in the production of Portland cement is significant in view of the fluctuations in the output of other leading mineral products such as coal, iron and copper. The curve of production of Portland cement, although not now rising at so rapid a rate as during 1909 and 1910, is still pointing upward and has yet to take its first downward drop.

Practically all mills report having to contend with adverse business conditions during the first 6 months of the year. Prices were lower than the average for 1911 during this period, and some plants reported the lowest prices for which they had ever sold cement. After the middle of the year conditions improved materially, and generally, during the last 4 months of 1912, the demand for Portland cement was sufficient to keep most mills running at full capacity. In the Lehigh district production was curtailed slightly in order to diminish accumulated stocks. Production and shipments in New York show the greatest proportionate increase of all districts. In the Southeastern States the increase in production and shipments was gratifyingly large, as it was also in the vicinity of Chicago, Ills., and in Iowa and Missouri. Certain plants in Kansas were much hampered by the failure of the supply of natural gas, and were obliged to shut down temporarily while installing coal burning devices. This feature contributed to the decrease in production in the Great Plains States. In the Pacific Coast States and in certain of the Rocky Mountain States production did not keep pace with that of 1911, owing to the lack of demand for cement for large public works.

The average price for the whole country of Portland cement per barrel in bulk at the mills will probably show a slight decrease when complete returns are received, although at the close of the year prices were much better than they had been during the last two years.

Eastern Pennsylvania and New Jersey, which together form the leading Portland cement manufacturing district of the United States, produced approximately 24,449,523 barrels of Portland cement in 1912, compared with 25,972,108 barrels in 1911. This represents a decrease of 1,522,585 barrels, or 5.9 per cent. The shipments of Portland cement in 1912 approximated 25,905,257 barrels, compared with 25,192,464 barrels shipped in 1911, an increase of 712,793 barrels, or 2.8 per cent. There were 20 mills reported as active in 1912, against 24 in 1911.

The mills in the State of New York produced approximately 4,490,180 barrels of Portland cement in 1912, compared with 3,314,217 barrels in 1911. This represents an increase of 1,175,963 barrels, or 35.5 per cent. The shipments of Portland cement in 1912 approximated 4,547,195 barrels, compared with 3,058,463 barrels shipped in 1911, an increase of 1,488,732 barrels, or 48.7 per cent. There were 7 mills reported as active in 1912, the same number as in 1911.

Correspondence.

[The Journal is not responsible for the opinions expressed by correspondents.]

Manager Little Brings Us Up-to-Date.

Consolidated Gas Purification and Chemical Company,
Nashville, Tenn., Jan. 16th, 1913.

To the Editors, American Gas Light Journal: It appears to me a strange fact that articles on "Gas Purification," appearing in one of your contemporaries for Jan. 1st, and in the Journal for Jan. 13th, have made no reference of any kind to "Ferox, No. III., Consolidated Oxide." This, of course, cannot be blamed on the Journal, as the articles were specially written by gas men; but I believe you will think that, as I do, by reason of the fact that we have advertised very extensively in both papers during the last 2 years, that some mention

should have been made of this material in any article that purported to be up-to-date.

Maybe Mr. Burdick does not know of our material, although it is in use at the Astoria plant, as well as 300 or 400 other prominent gas plants all over the country.

I think the JOURNAL should try and keep its columns to date, and this can be done by augmenting the information given by Mr. Burdick. He states in his article that "A good sponge, containing 30 pounds of ferric oxide to the bushel, will remove H_2S from 50,000 to 75,000 feet of coal gas per bushel." I can show a record with "Ferox" of 40,000 feet per bushel *per charge;* and this without using air, or working without switching the boxes or reviving *in situ*. It is also stated that sponge should be used with numerous revivings until its free sulphur content is at least 40 per cent. We would look upon our "Ferox" as an absolute failure if it were not in its prime when fouled up to 40 per cent. This Osler theory about purification ought to be "as dead as Dodo." Yours very truly, A. S. B. LITTLE,
General Manager.

Special English Correspondence.

COMMUNICATED BY NORTON H. HUMPHRYS.

SALISBURY, ENGLAND, January 10, 1913.

A Case of Trade Jealousy.—Spontaneous Combustion of Coal.—Indirect Lighting.

Continuing my remarks on the antagonism between chemical manufacturers and gas companies from last month's letter, I am now in a position to say that the findings of the Parliamentary Committee are exactly on the lines there indicated. Gas undertakings have successfully maintained their right to buy from or sell to each other when it suits their purpose to do so. The Committee agree that gas companies should not become dealers in chemicals, or manufacturers of products, extraneous to or outside of their proper sphere. But this is a matter that has never been contemplated or claimed. At the same time, science advanced so rapidly that it is quite within the bounds of possibility that some company, not necessarily a statutory gas company, may find it advantageous to take up the manufacture of gas, not as a primary, but as a by-product. Some of the chemical manufacturers may do so, and in that case they will find that the weapon directed at the gas industry, has turned upon themselves. No doubt there has been a regard, not only towards the present practice, but to the rapid develpoment of the gas industry in all departments, technical as well as commercial, and to the possibility of immediate extensions in the way of working up residuals, such for example as the preparation of refined tar for public roads. But so far as the present is concerned, it is sufficient that gas undertakings retain the right to buy from or sell to their neighbors.

To give a case in point from my own practice. I have for many years been accustomed to take all the make of ammoniacal liquor from three neighboring works, and with this assistance have been able to put down a first class sulphate plant, and to work it at a profit. And there are hundreds of similar cases about the country. If the demand for refined tar increases, it will be worth while to consider a dehydrating plant, and then the same question will arise, with regard to tar. My small neighbors will be glad to sell me their surplus at a reasonable advance on the price at present obtained, and having a plant equal to dealing with the whole, I shall not lose on the transaction.

The incident also illustrates the advantage and the necessity for a representative Association, sufficiently strong and active not only to promptly detect insidious attempts of this character, but to act with equal promptness. But for decided action on the part of the Institution of Gas Engineers, the Gas Companies' Protection Association and the Association of Municipal Corporations, the industry as a whole might have woke up one morning to find that the residual department had practically passed over to the control of the chemical manufacturers. These Associations are fairly entitled to the credit of such a satisfactory termination of this long-standing dispute.

A somewhat peculiar position has arisen with regard to one or two undertakings that were before Parliament this year. It may be explained that the matter was not brought to a head by the chemical manufacturers. They did not, for the present, press for a general inquiry, but their policy was to oppose individual undertakings, preferably small ones, in their applications to Parliament, and to get clauses inserted that in course of time could be held to constitute a precedent. The fact that they had achieved some success in this direction roused the Associations to the sense of a need for prompt action. The difficulty is how to relieve those who have accepted restrictions of a character now pronounced, on the authority of the Parliamentary Committee, to be unfair. It is suggested that this object can be effected by the passing of a special Act of Parliament legalizing the recommendations of the Committee.

One might well think that the coal strike of last April was all over and done with, but experience goes to show that a 6-weeks' stoppage carries wide and far reaching consequences in all sorts of unexpected directions. The effect of exhausting the stocks which it was the custom to keep on hand against emergencies, such as flooding or breakage of machinery, is that the least little defect becomes evident on the rate of supply, which is a serious matter for regular users. The same difficulty arises with a slight additional demand such as that brought about by a sharp fall in the thermometer. And the miners' associations are for the most part opposed to the accumulation of stocks. They look upon the shot in the locker in the form of strike funds, and stocks of coal on the bank as two opposing elements, and consider that in the event of a contest the victory will fall to those that can hold out longest. From their point of view the lower the stocks the stronger their position. But to those responsible under heavy penalties for carrying on operations involving regular consumption, a stock is an absolute necessity, and it is evident that some of the reserve against contingencies that was formerly held on the pit bank, will have to be transferred to the gas works' yard.

Another difficulty during the summer and autumn, has been a marked increase in the matter of spontaneous combustion. It is evident that some of the coal raised immediately after the stoppage was decidedly heated, and that it went direct into stock at the gasworks before it had time to cool. Up to the present time spontaneous combustion was an exceptional occurrence, so rare that it fell flat if raised at a meeting of gas engineers. But at a recent meeting of the Midland Association, it was introduced by a very carefully worked up paper contributed by Mr. Hendrick, which was received in a manner which indicated that the author had touched upon what, in more senses than one, is a burning question. Like the deposition of naphthaline, experiences with coal appear quite contradicting. We know that one engineer will neglect all the accepted tenets as to gradual and sufficient condensation and yet never experience naphthaline trouble, while another, who has adopted every known preventative appliance, is worried out of his life. And so it is with coal. One engineer piles stacks 40 feet high, and with no special means of ventilation, etc., and does not know what hot coal is like. Another, with all sorts of precautions and preventatives, is obliged to fall back occasionally on the assistance of the local fire engines. Some recommend free ventilation, and others hold the view that there is nothing to equal a current of air as a means of starting heating. Experience appears to agree on one or two important points. For some years the phenomena was ascribed to the oxidation of pyrites, but it is now known that coal dust is the chief cause. A hard lump coal such as cannel, does not fire, but soft coal, which if stacked in the lump will be crushed towards the base, or piled say 15 feet high, is the most liable. If coal is delivered into store from the spout of a conveyor, it falls in a conical heap. The lumps roll down the sides, with the result that there is an accumulation of small lumps and dust immediately under the spout. Pockets of dust in a heap are usually the *source* of the trouble, which, when once started, may spread to the lumps. The usual experience, when a heap of fouled oxide fires, is that the combustion commences at a point where there is a draught, or a free supply of fresh air, and the same thing has been observed with coal. Tubes or frames inserted for the purposes of keeping the heap cool have been found to have a contrary effect. One ingenious suggestion is the use of refrigerating tubes dispersed throughout the heap, and a suitable circulating liquid such as brine, while another is to seal the stack air tight by a coating as thin of pitch and coke dust. It is also agreed that the presence of moisture accelerates chemical action, and that damp coal is more liable to fire than dry. In this connection we may remark that soft coals as a rule are more porous, more liable to take up and retain moisture, than hard coal.

Only a short time ago I remarked that gas engineers as a rule were too modest. They have been accustomed on many occasions to devise special methods for meeting special requirements, and it has not been their practice to advertise such special devices as a grand or novel discovery. Those who have had any experience in arranging the lighting of theaters, public rooms, etc., will be amused to find, in a lengthy paper recently read at a meeting of the Illuminating

Engineering Society, the practical application of indirect lighting claimed as a novel and important discovery. What is called indirect lighting simply amounts to partially or entirely concealing or covering the source of light. The authors appear to be interested in electricity, and have no doubt found that filament lamps are injurious to the eyesight, and that, therefore, a system of indirect lighting is more necessary with them, than with other forms of illumination. And this may also account for the fact that they do not appear to be acquainted with other lighting arrangements. Our Houses of Parliament have been furnished with an indirect lighting system for years, and it is quite half a century ago that Mr. William Sugg fitted an eye cup to the argand form of gas burner, with a view of partially cutting off direct rays. The well known comet form of opal globe has the same effect, as the wide open top enables the lower part to act as a reflector, and project light upwards on to the ceiling. And if, as is usually the case, the ceiling is dead white, a large amount of useful light is furnished in this manner. The reflecting action is probably the explanation of the common experience that the addition of opal globes to naked lights is found to improve the lighting, and that in spite of the fact that the opal obscures 50 per cent. or more of the light rays. The accepted way of accounting for this well known fact, is to quote the law of contrasts. That a bright intense light of small area irritates the retina, and produces a sensation of unequal lighting, and that the opal globe by practically enlarging the area of the light giving surface, diminishes the intensity per unit of area. The experience with filament lights goes to show that there is something in this, but the reflecting action above noticed is equally important. In a Cathedral city one is frequently called upon to advise as to the lighting of apartments, the walls and ceilings of which are of panelled oak nearly black with age. The effect of comet globes in a room of this kind, as compared with that in a room of similar proportions (but with a lime washed ceiling) is a good illustration of the point. But the best known application of indirect lighting is the footlights as used at theaters and concert rooms. These are not only concealed from the audience, but are furnished with reflectors to direct the light where it is wanted. The side and top lights are also examples of indirect lighting. The objection to entire indirect lighting, in which the source of light is entirely obscured, such as by fixing a shallow bowl made of opaque material close under an ordinary pendant light, of sufficient size to render the source of light invisible from the floor line, is that there is a difficulty in avoiding a dark patch or shadow under the light. This would be particularly noticeable with walls and furnishings of a dark color. Of course, it can be partially met by using a material like opal glass for the intercepter, which not only reflects, but to some extent transmits light. It would appear that total indirect lighting can only be successfully applied to rooms in which there is not only a white ceiling, but the upper part of the walls, at least, must be white or a very light color. One advantage of the total interception is that the intercepter can be lined with specially made reflectors, calculated to direct the whole of the light in a direction where it will be utilized. I have repeatedly seen it claimed as a disadvantage attaching to the upright incandescent gas burner, that the greater part of the light is diverted in an upward direction. This objection only applies to direct lighting. It is an advantage where indirect lighting is concerned. Another well known example of indirect lighting is the common practice of fitting white porcelain reflectors in street lamps, or in the form of wall lantern sometimes called a bulkhead light. Many people have been practically depending upon the so-called new system for years, and it can be supplied with equal success to any source of artificial light.

Items of Interest
FROM VARIOUS LOCALITIES.

A CORRESPONDENT in Detroit, Mich., writing under date of the 16th inst., forwards the following; "The Corpus Christi Gas Company has been duly incorporated, under the laws of Texas, for the purpose of building, owning and operating a gas and electric plant in the city of Corpus Christi, Tex., with a total authorised capital stock of $250,000, all of which has been subscribed, and 50 per cent. of which has been paid in cash into the treasury of the corporation. The Directors of the corporation are Messrs. Henry M. Wallace, Raymond G. St. John and Wm. T. Utley, Jr., of Detroit; J. D. Utley, Jr., of Waxahachie, Tex.; and Herbert L. St. John, of Corpus Christi. The officers of the corporation are: President, H. M. Wallace; Vice-President, R. G. St. John; Secy.-Treas., W. T. Utley. A contract for the manufacture and erection, complete, of a 4-foot carbureted water gas set has been awarded to the U. G. I. Company, of Philadelphia, Pa. Contracts for the construction and erection, complete, of a 2-lift storage gasholder and for a relief holder up to retaining 10,000 cubic feet, have been awarded to the Stacey Mfg. Company, Cincinnati. The order for something over 14 miles of heavy weight, cast iron pipe was placed with the Walker Mfg. & Supply Company, Detroit, Mich. The actual work of main laying was started the 20th ult., and is proceeding rapidly. This property will be owned and operated by the Henry M. Wallace Company, of Detroit, which concern owns and operates these gas properties: Menominee, Wis.; and at these named Texas points: Temple and Waxahachie. The construction work is in charge of Mr. Herbert L. St. John, as Engineer. Mr. St. John, it might be remarked, designed and superintended the erection of the gas plants in Temple and in Waxahachie. The Company's local office is in charge of Mr. A. L. Thormann, who formerly held the position of Superintendent of new business at Temple, prior to which service he held a responsible position with the Detroit City Gas Company.

ADVICES by way of Milwaukee are to the effect that Mr. C. D. Penniston, General Manager of the Kenosha plant of the Wisconsin Gas and Electric Company, has resigned that position; as also has Mr. E. R. Walton, Superintendent of Construction for the same Company.

MR. W. H. HOOPER, a local man, has purchased the property of the Castine (Me.) Gas Company, and will hereafter operate the same under methods quite unlike those of its former proprietors,

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ON Wednesday next, Mr. J. T. Alexander, City Clerk, will open bids for the right to construct and operate a gas plant in the City of Watts, Cal., the life of the grant to be 50 years. Some of the provisions, considering the nature and purpose of the invitation, would seem to have been "regulated" to the point of keeping anyone from bidding in the premises—certainly anyone with a very moderate idea of how to build and operate a gas plant. For instance, the Watts authorities reserve the right to name annually the rate for which gas may be sold during the succeeding twelvemonth. When the bids are opened, any responsible person present, not having made a sealed bid, may try for the franchise by bidding a sum not less than 10 per cent. in excess of the highest sum bid, such bidding to be kept up until the right is knocked down to the highest 10 per cent. excess bidder. These bids may be in steps of 10 per cent. When the knock-down is accomplished, the knocked is to put up, either in cash or certified check, a sum equal to 10 per cent. of the total amount bid; and shall, within 24 hours of the acceptance of his (or its) bid, put up the balance of 90 per cent. Failing which the knocked is knocked out and the bidding and the knocking are to be carried on some other fixed date. There are other safeguards around this wonderful initiation and process; but it would seem sufficient had it been reproduced to show that no one from this section of the State will be knocked out in the bidding for the gas franchise of the City of Watts.

THE many friends of Mr. Jos. E. Hodgson, Manager of the Fulton (N. Y.) County Gas Company, will be glad to know that he is rapidly convalescing in the Nathan Littauer Hospital, Gloversville, N. Y., to which institution he had been removed when his complaint assumed a serious state.

AT the annual meeting of the Laclede-Christy Clay Products Company, held in St. Louis, Mo., the 15th inst., the reports showed a very prosperous year. The annual election for officers resulted as follows: Directors, Messrs. James Green, John L. Green, R. D. Hatton, Montague Lyon, Wm. T. Christy and J. Le Beau Christy. The Directors perfected the following organization; Chairman of the Board, James Green; President, John L. Green; Vice-Pres. and Gen. Mgr., R. D. Hatton; Vice-President, Montague Lyon; Secretary, W. J. Westphalen; Treasurer, R. D. Hatton; Asst. Secy. and Treas., Wm. T. Christy; Gas Engr. and Mgr., Chain Grate Stoker Dept., Roger W. Polk; Mgr. Gen. Sales Dept., H. K. Lockland; Mgr. Glass Industry Dept., John H. McKelvey.

ON the 15th inst., Mr. Charles Hubbard Johnson, Cashier for the Boston (Mass.) Consolidated Gas Company, celebrated the 60th anniversary of his direct connection with the gas industry of Boston, the afternoon of the 15th inst. He entered the employ of the old Boston Company when Samuel A. Eliot, father of the man who subsequently

became famous as the President of Harvard College, was its President and when the senior Mr. Greenough was its Treasurer. The selling rate was then $3.25 per 1,000 cubic feet, the Company had 8,600 consumers, and the entire output was manufactured at the old works located in the North End station.

"B. M. M.," writing from Weymouth, Mass., under date of the 15th inst., incloses the following: "At a meeting of the Progress Club, held here last week, Mr. H. S. Lawton presided. The subject of the debate was:

"'*Resolved*, That it is better for the Old Colony Gas Company to have its salesmen read meters, inspect appliances and make collections in place of these things being done by other men?' Messrs. Farrington and Hollis spoke in the affirmative, while Messrs. Torrey and Lovell opposed. Later the debate became general, practically all the members participating. The judges were Messrs. Smith, Eaton and Stiteler, and their decision was in favor of the affirmants. The test of the storage holder was completed to the satisfaction of both the Company and the constructors, and it will be put in commission forthwith. Two trial gas arcs of the Humphrey type have been installed in the Messrs. Hurley & Co. shoe shop at Rockland, and if (to my mind the matter was settled in the affirmative when the trial order was given) the lamps give satisfaction the entire plant will be fitted with them. The Old Colony's branch offices in Braintree and Whitman have been discontinued."

"AL. S. NICHOLS, the well-liked Assistant Treasurer of the Blackstone Valley Gas and Electric Company, and Office Manager of the Woonsocket (R. I.) division of its properties, has been appointed to an important position with the Mississippi River Power Company, another of the Stone & Webster interests. Mr. George A. Stiness, Assistant Treasurer at Pawtucket, will take up the like duties heretofore attended to by Mr. Nichols, and Mr. Charles D. Heisley, of the Woonsocket headquarters, has been promoted to the dual office of Manager and Chief Accountant, vice Mr. Nichols. The night prior to his going away Mr. Nichols was the guest of honor at a dinner given in the St. James Hotel, Woonsocket, and following the dinner he held a reception at the Company's Clubroom, towards the close of which his associates presented him with a leather portfolio and a handsome travelling bag. The presentation speech was made by Mr. Alfred F. Townsend, Manager of the Woonsocket division.—F. M. S."

AT the annual meeting of the Tampa (Fla.) Gas Company the Directors chosen were: John J. Gribbel, David J. Collins and Peter O. Knight; President, Jno. J. Gribbel; Vice-President and Treasurer, David J. Collins; Secretary, Roscoe Nettles. The development in the Company's trading continues, and the consumers are evidently desirous of giving credit to the new owners for the work of construction and reconstruction so successfully carried on by them since their acquirement of the property.

SOME facts from the annual report of the Old Colony (Mass.) Gas Company positively show that the business ways of its owners are of the present day. The plant at East Braintree, on Fore river, which was completed in 1911, is now satisfactorily supplying gas to the districts of Braintree, Weymouth, Rockland, Abington and Whitman. The mileage of mains has been increased to 84 from 32, and a 750,000-foot storage holder was satisfactorily put at work. With only ¼ of its territory developed, although 2,219 consumers were hooked-up last year, the proprietors confidently assert that at least twice that number will be on the books before December 31, 1913.

AT the annual meeting of the shareholders of the Springfield (Mo.) Gas and Electric Company the officers elected were: President, Mr. C. C. Chappelle—Mr. Chappelle is also Vice-President and General Manager of the Federal Light and Traction Company; Vice-President, Mr. W. A. Haller; Secretary and Treasurer, Mr. N. J. Cunningham. The reports showed that the Company is in excellent shape.

"DEAR JOURNAL: About the best watched man who left Houston, Tex., in late days was that 'Prince of Gas Men,' Mr. C. H. Dunbar, the gentleman who, as Manager, directs the fortunes of the Houston Gas and Fuel Company. He has not been enjoying the best of health for a month or so, wherefore the Directors voted him a 3 months leave, which time will be taken up by him in a visit to your effete (East, and by a further journeying to Panama, there to inspect the wondrous works of Col. Goethals and his men. The employees, believing that such a man should be properly watched, with that end in view directed Mr. R. John Titzel (who will act as Manager during Mr. Dunbar's journeyings) to select a watch that would keep time, everywhere and all-the-while. Further, Mr. Titzel was instructed to secure the watch to Mr. Dunbar's person by means of massive cable chain, of the 24-carat type; and, again, that from the chain was to dangle another 24-carat device in the shape of a cigar-cutter. The order was attended to after the fashion in which Mr. Titzel always does things, and when the jewels were assembled, the case, containing, too, a letter of appreciation from his men, was handed privately to Mr. Dunbar by Mr. Titzel. This surely was a surprise. Just before leaving his office the afternoon of the presentation Mr. Dunbar had these words, in the shape of a typewritten letter, posted in a conspicuous place where it could not fail to be seen by any and all who entered the Company's premises: 'This token from the big-hearted fellows in the Company's service really touches me deeply. It was just like them. I do not know of any other organization blessed with more faithful or efficient employees than is the Houston Gas and Fuel Company. I really cannot put in words the way I feel about the handsome watch, chain and charm that they have given me. I am proud of it; and I am proud of them!' Mr. Titzel will have charge of the Company's business during the vacation time of Mr. Dunbar.—WISE."

MR. C. H. GEIST and his co-workers have acquired control of the plant and other properties of the Indianapolis, Ind., Water Company. The magnitude of the purchase may be tentatively comprehended when it is noted that the Indianapolis Water Company has outstanding the following capital sums: Bonds, $4,800,000; capital stock (common) $5,000,000.

THE issue of the "Vulcan Bulletin," for January, from the Press of William M. Crane Co., New York city, is No. 5 of Volume 1, and it is well-up in quality to any of its predecessors. A main "tip" in this instance, from Editor Brooks, has to do with the mailing of 20 pages or sheets, these being issued to "Enable our present catalogue to cope with the demands of the next few weeks; and to hold the fort until the new catalogue is mailed."

MR. R. BICKFORD, formerly with the Twin City Railways & Light Company, Rock Island, Ills., has been appointed Industrial Fuel Expert, Laclede Gas Light Company, St. Louis, Mo.

JUDGE HOOKER has issued an order confir ming the sale of the plant of the Medina (N. Y.) Gas Company, to the representatives of Thos. G. Hinds (Jersey City, N. J.) the leading bondh older, at his bid of $15,000.

FOLLOWING the purchase of the Medina (N. Y.) gas plant by the bondholders, the proprietors appointed Mr. John Collins as Superintendent. His son (Edward Collins) succeeds to the Superintendency of the Hoosick Falls (N. Y.) plant.

A NUMBER of the business men of Newnan, Ga., after an investigation of the matter, have determined to organize a gas company at that point. The concern is to be capitalized in $50,000, and it will be subscribed by local people. The city authorities having determined to pave the streets in the main sections of the city, the proprietors of the Company propose to at once go on with the task of mainlaying.

THIS shows good, live business sense, the news coming in the shape of a letter from Richmond, Va., dated the 18th inst.: "At a meeting of the Administrative Board, held the 15th, the use of tar and other by-products of the City Gas Works was discussed at length, largely at the instigation of Supt. Knowles. The debate terminated in the passage of a resolution (presented by Capt. McCarthy) instructing Supt. Knowles to make thorough inquiry into the nature and cost of the plant necessary to prepare the tar for use in street work. A supplementary resolution also directs the Superintendent not to renew any contract for the sale of gas tar after the termination of the existing term contract; further, to acquaint the Board of the precise terms of such contract; finally, to determine whether the erection of such tar preparing would require land additional to that now owned by the city in and about the gas works.

The Market for Gas Securities.

There is no change to report in the figures for Consolidated this week as against last, 138 to 138½. The annual meeting of the Company will be held to-day, the polls being open from noon to 1 P.M.

Brooklyn Union is also resultless, in so far as change in figures is concerned. The general listing of gas securities shows that values are being fairly well maintained. The annual meeting of the Peoples Gas Light and Coke Company, Chicago, is called for 11 A.M., the 10th prox. The Portland (Ore.) Gas and Coke Company, will pay a regular quarterly dividend of 1¾ per cent. on its preferred the 1st prox. Perhaps the most marked news in out-of-town gas shares was that made in respect of those of the Baltimore Consolidated Gas, Electric Light and Power Company. The decision in the rate case, which was tried at length before the Maryland Public Service Commission, was the inciting cause; and in this connection it is well worthy of note that the decision was based on a spirit of fairness to all concerned. The high figure in the common was 121, and the preferred reached 120½. These figures show a gain of 11 for the preferred and of 16 for the common, basing the comparison on the respective values of each a week or so prior to the Commission's determination. The Fall River (Mass.) Company's regular quarterly of 3 is payable the 1st prox.

Gas Stocks.

Quotations by George W. Close, Broker and Dealer in Gas Stocks.

115 BROADWAY, NEW YORK CITY.

JANUARY 27.

☞ All communications will receive particular attention.

☞ The following quotations are based on the par value of $100 per share:

N. Y. City Companies.	*Capital.*	*Par.*	*Bid.*	*Asked*
Consolidated Gas Co.	$78,177,000	100	138	138¼
Central Union Gas Co. —				
1st 5's, due 1927, J. & J.	$5,500,000	1,000	103	103
Equitable Gas Light Co.—				
Con. 5's, due 1932, M. & S.	1,000,000	1,000	105	106
Mutual Gas Co.	3,600,000	100	188	197
New Amsterdam Gas Co.—				
1st Con. 5's, due 1948, J. & J.	11,000,000	1,000	101	102¾
New York & Richmond Gas				
Co. (Staten Island)	1,500,000	100	35	50
1st Mtg. Gold Bds. 5 p. ct.	1,500,000	—	96½	100½
New York and East River—				
1st 5's, due 1944, J. & J.	3,500,000	1,000	103	105
Con. 5's, due 1945, J. & J.	1,500,000	—	95	100
Northern Union—				
1st 5's, due 1927, J. & J.	1,250,000	1,000	99½	101
Standard	5,000,000	100	60	70
Preferred	5,000,000	100	90	100
1st Mtg. 5's, due 1930, M. & N.	1,500,000	1,000	103	105
The Brooklyn Union	15,000,000	1,000	137	140
1st Con. 5's, due 1948, M. & N.	15,000,000	—	105¾	107
Yonkers	200,650	500	120	—
Out-of-Town Companies.				
Bay State	50,000,000	50	½	⅝
" Income Bonds	2,000,000	1,000	—	75
Binghampton Gas Works	450,000	100	—	—
" 1st Mtg. 5's	500,000	1,000	97	100
Boston United Gas Co.—				
1st Series S. F. Trust	7,000,000	1,000	82	85
2d " " "	3,000,000	1,000	47½	50
Buffalo City Gas Co.	5,500,000	100	5	8
Bonds, 5's	5,250,000	1,000	59	60
Capital, Sacramento	500,000	50	—	35
Bonds (6's)	150,000	1,000	—	—
Chicago Gas Co. Guaranteed				
Gold Bonds	7,000,000	1,000	104	106¼
Cincinnati Gas and Electric				
Co.	29,500,000	100	87	90
Columbus (O.) Gas Co., 1st				
Mortgage Bonds	1,500,000	1,000	96	98
Columbus (O.) Gas Lt. &				
Heating Co.	1,682,750	100	90½	91
Preferred	3,026,500	100	75½	80
Consumers, Toronto	2,000,000	50	200	204
Consolidated, Baltimore	13,460,084		118¾	119
Mortgages, 5's	3,400,000		—	—
General Mortgage 4½	10,661,000		—	—
Con. Gas Co., Baltimore				
City, 4½	2,751,000		—	—
Consolidated Gas Co. of N. J.	1,000,000	100	15	—
Con. Mtg. 5's	976,000	1,000	94	96
Bonds	75,000	—	—	100
Detroit City Gas Co.	6,580,000	—	—	50
Detroit Gas Co., 5's	381,000	1,000	75	80
" Prior Lien 5's	5,619,000	1,000	97	100½
Essex and Hudson Gas Co.	6,500,000	—	130	136
Fort Wayne	2,000,000	—	—	—
" Bonds	2,000,000	—	55	—
Grand Rapids Gas Light Co.,				
1st Mtg. 5's	1,350,000	1,000	100	101
Hartford	750,000	25	190	200
Hudson County Gas Co., of				
New Jersey	10,500,000	—	130	133
" Bonds, 5's	10,500,000	—	104	106
Indianapolis	2,000,000	—	38	45
" Bonds, 5's	2,650,000	—	104½	105
Jackson Gas Co.	250,000	50	82	—
" 1st Mtg. 5's	290,000	1,000	91	
Kansas City Gas Light Co.,				
of Missouri	5,000,000	100	—	86
Bonds, 1st 5's	8,822,000	1,000	98½	99
Laclede Gas Co., St. Louis.	10,000,000	100	103	104½
Preferred	2,500,000	100	99	102
Bonds	10,000,000	1,000	102¾	103
Lafayette Gas Co., Ind.	1,000,000	100	—	60
Bonds	1,000,000	1,000	60	65
Louisville	2,570,000	50	120	120
Madison Gas and Electric Co.				
" 1st Mtg. 6's	400,000	1,000	106	
Massachusetts Gas Companies, of Boston	25,000,000	100	93	93¾
Preferred	25,000,000	100	93	93½
Montreal L. H.& P., Canada	9,000,000	100	236½	236¾
Nashville Gas Light Co.	1,000,000	100	110	—
Newark, N. J., Con. Gas Co.	6,000,000	—	97	98
Bonds, 6's	6,000,000	—	127	128
New Haven Gas Co.	5,000,000	25	182	190
Peoples Gas Lt. & Coke Co.,				
Chicago	25,000,000	100	114	114½
1st Mortgage	20,100,000	1,000	102	102½
2d "	2,500,000	1,000	104	—
Rochester Gas & Electric Co.	2,150,000	50	88	—
Preferred	2,150,000	50	118	—
Consolidated 5's	2,000,000	—	104¾	105½
Pacific Gas and Electric Co.	15,500,000	—	60	61
St. Joseph Gas Co.—				
1st Mtg. 5's	1,000,000	1,000	96	98
St. Paul Gas Light Co.	2,500,000	100	—	—
1st Mortgages, 6's	650,000	1,000	104	105
Extension, 6's	600,000	1,000	112½	115
General Mortgage, 5's	3,447,000	1,000	94	96
Syracuse Gas Co., N. Y.	1,975,000	100	50	55
Bonds	2,047,000	1,000	101	103
Washington (D. C.) Gas Co.	1,600,000	200	427½	430
1st Mortgage, 6's	600,000	—	—	—
Western Gas Co., Milwaukee	4,000,000	—	—	—
Wilmington (Del.) Gas Co.	600,000	50	—	—

MEETING TIMES OF THE VARIOUS GAS ASSOCIATIONS.

American Gas Institute.—Annual meeting, Richmond, Va., October 15-17, 1913. Officers: President, W. R. Addicks, New York City. Secretary, Geo. G. Ramsdell, 29 West 39th st., N. Y. City.

Canadian Gas Association.—Annual meeting Sept. 1913. Officers: President, Arthur Hewitt, Toronto, Ont.; Secretary and Treasurer, John Keilor, Hamilton, Ont.

Empire State Gas and Electric Association.—Annual meeting, New York City, Oct. 8, 1913. Officers: President, C. G. M. Thomas, Long Island City, N. Y.; Secretary, C. H. B. Chapin, 39 W. 39th street. New York City.

Gas Meters.—Monthly Meetings; New York Section, Chairman, Will W. Barnes; Secretary, H. Thurston Owens, 42 Pine street. Philadelphia Section; Chairman, L. R. Dutton; Secretary, H. F. Patterson, Jr., 833 Chestnut street. Cleveland Section, Chairman, F. R. Hutchinson; Secretary, A. B. Holtz, East Ohio Gas Co. New England Section, Chairman, F. M. Roberts, Haverhill; Sec., F. K. Wells, 60 Broad st., Boston.

Guild of Gas Managers of New England.—Annual meeting, March, 1913. Young's Hotel, Boston; monthly meeting, second Saturday. Officers: President, Walter G. Africa, Manchester, N. H.; Secretary, H. K. Morrison, Brockton, Mass.

Illinois Gas Association.—Annual meeting, March 19th and 20th, 1913. Chicago, Ills. Officers: President, H. O. Channon, Quincy, Ills.; Secretary-Treasurer, Horace H. Clark, 115 No. Oak Park avenue, Oak Park, Ills.

Illuminating Engineering Society.—Annual meeting, ——— September, 1913. Meetings of Sections, monthly. Pres., Preston S. Millar; General Secretary, J. D. Israel, 29 W. 39th street, New York City. Sections: New York, Secretary, C. L. Law, 124 West 42d street. New England, Secretary, H. C. Jones, 10 High street, Boston, Mass. Philadelphia, Secretary, L. B. Eichengreen, Broad and Arch streets. Chicago, Secretary, J. B. Jackson, 26 North Market street. Pittsburgh, Secretary, J. C. Mundo, Oliver Building.

Indiana Gas Association.—Annual meeting, March 12 and 13, 1913. Indianapolis. Officers: President, Howard L. Olds, Indianapolis; Vice-President, Wm. Wallace, Lafayette; Secretary-Treasurer, Philmer Eves, Indianapolis.

Iowa District Gas Association.—Annual meeting, May 22, 23, 24, 1913; Burlington, Ia. Officers: President, C. W. Fair, Atlantic, Ia.; Secretary, G. I. Vincent, Des Moines, Ia.

Kansas Gas, Water and Electric Light Association.—Annual meeting, October —— 1913. ——— Officers: President, L. O. Ripley, Emporia, Kas.; Secretary and Treasurer, W. H. Fellows, Leavenworth, Kas.

Michigan Gas Association—Annual meeting, September——1913; ——— Officers: President, W. S. Blauvelt, Detroit, Mic; Secretary-Treasurer, Glenn R. Chamberlain, Grand Rapids, Mich.

Missouri Electric Light, Gas, Water Works and Street Railway Association.—Annual meeting, April, 1913; Mexico, Mo. Officers: President, P. A. Bertrand, Joplin, Mo.; Secretary and Treasurer, P. W. Markham, Brookfield, Mo.

National Commercial Gas Association.—Annual meeting and gas show, Dec. 1-6, 1913. Philadelphia, Pa. Officers: President, C. W. Hare, Philadelphia Pa.; Secretary, Louis Stotz, 29 West 39th street, New York City.

Natural Gas Association.—Annual meeting, Cleveland, O., May 20-22, 1913; Officers: President, M. B. Daly, Cleveland, O; Secretary, T. C. Jones, Delaware, O.

New England Gas Association.—Annual meeting, February, 19th and 20th, 1913 Boston. Officers: President, D. D. Barnum, Worcester, Mass.; Secretary-Treasurer, N. W. Gifford, East Boston, Mass.

New Jersey State Gas Association.—Annual Meeting, April —, 1913, ——— N. J.—President, William H. Pettes, Newark, N. J.; Secretary-Treasurer, Arthur H. Osborn Belmar, N. J.

Ohio Gas Association.—Annual meeting, February ———, 1913, Columbus, O.; President, John M. Garard, Columbus, O.; Secretary, L. B. Denning, Columbus, O.

Oklahoma Gas, Electric and Railway Association.—Annual meeting, Oklahoma City May, ——1913. President, F. W. Caldwell, Shawnee, Okla.; Secretary, H. V. Bozell, Norman, Okla.

Pacific Coast Gas Association.—Annual meeting, San Jose, Cal., September 16, 17, 18, 1913. Officers: President, Henry E. Adams, Stockton, Cal.; Secretary-Treasurer, Henry B stwick, 445 Sutter street, San Francisco, Cal.

Pennsylvania Gas Association.—Annual meeting, York, Pa., April 9-11, 1913; Officers, President, H. H. Ganser, Norristown, Pa.; Secretary-Treasurer, W. O. Lamson, Jr., West Chester, Pa.

Society of Gas Lighting.—Annual meeting Dec., 11, 1913; monthly meetings, second Thursday. Place, New York City. Officers: President, Fred. S. Benson; Secretary, George G. Ramsdell, 29 West 39th street, New York city

Southern Gas Association.—Annual meeting, Charlotte, N. C., April 18-20, 1913, Officers: President, C. E. White, Montgomery, Ala.; Secretary-Treasurer, E. D. Brewer, Atlanta, Ga.

Southwestern Electrical and Gas Association.—Annual meeting. May 21, 22, 23 and 24, 1913, Galveston, Tex. Officers: President, F. M. Lege, Jr., Galveston, Tex.; Secretary H. S. Cooper, 405 Slaughter Bldg., Dallas, Tex.

Wisconsin Gas Association.—Annual meeting, May 14 and 15, 1913, Milwaukee, Wis. Officers: President, I. F. Wortendyke, Janesville, Wis.; Secretary-Treasurer, Henry Harmon, Milwaukee, Wis.